INDUSTRIAL EQUIPMENT NEWS

AUGUST - 1951
VOL. 19 • NO. 8

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

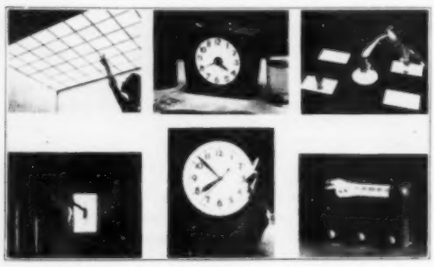
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-7532 if you write the maker

LIGHTING . . Flat panel lamp presents flat luminous surface

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, 16th Floor, New York 19, N. Y.



Panelite trade names new design of electric lamp consisting of a glass panel with a transparent electrically-conductive coating on its rear face, a second coating back of the conductive coating consisting of a phosphor dielectric measuring 0.01 in. in thickness and a back covering of foil or of metal flashed in place over this coating. Wire leads are soldered to the back and to the conductive coating on the glass to make the dielectric luminous.

One of two types presents a green luminosity at 0.1 foot-lambert, about the brightness of a white object in full moonlight, when the leads are connected into a 110-volt 60-cycle ac. circuit. The second of the two types presents a green luminosity of about 2.0 footlamberts when a 500-volt step up transformer is made part of the circuit.

The lamp is designed for areas where temperature ranges between minus 20 and plus 175 deg. F. A unit for a small clock face, about 3½ in. in diameter, rates about 0.02 watt on 110-volt operation. A panel measuring one sq. ft. for operation on 110 volts rates 8 milliamperes.

BREVITY—Identify by IEN-7533 if you write the maker

PLASTIC . . Teflon on Fiberglas prevents sticking, corrosion, insulates

Source: IRVINGTON VARNISH & INSULATOR CO.
4-8 Argyle Terrace, Irvington 11, N. J.

Supplied in rolls, cut sheets, tapes

New combination of the chemically-inert heat-resistant DuPont plastic Teflon is coated on Fiberglas cloth to produce a new sheet material ranging in thickness from 0.003 to 0.010 in. and in width to 38 inches. The material is available in rolls and can be slit to tapes ¼ in. or more in width.

The material tests for tensile strength to 72 lb. per inch of width in lengthwise direction in the 0.003-in. thickness. It rates 200 lb. in the 0.010-in. thickness. Dielectric strength is 290 to 153 volts per mil between 2-in. electrodes. Class-H requirements are met for high-temperature operation as an electrical insulator. Sticky materials will not adhere.

Applications include use as coil separators, slot liners, coil wrappers in motors and generators for service particularly in corrosive atmospheres. It is useful on conveying equipment as a facing where sticky materials must be handled and as a covering for heat-sealers. It is a good gasket material.

BREVITY—Identify by -7534 if you write the maker

PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

Limited quantity first come first served

We suggest your prompt reply to this offer to send you a free copy of the 1951 Edition of Thomas' Register Junior. In it are the listings of names, addresses and ratings of selected manufacturers under some 50,000 product headings. Knowing the existing difficulties in finding sources for prompt supply of many products, we anticipate an unusual demand.

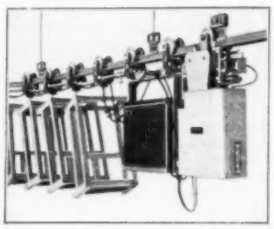
The book, a companion publication of the main Thomas' Register, will contain approximately 2,300 pages. It measures 4 by 10 in. by about 3 in. in thickness. It is scheduled to come from the presses shortly. We will accept reservations as long as the supply lasts. You can make yours by checking the Reader Service Form with this issue or by writing to us.

GET IN THE STEEL SCRAP

BREVITY—Identify by IEN-7535 if you write the maker

CONVEYING . . Monorail tractor and trailer units, powered by battery

Source: BLOOM SYSTEM INC.
19429-33 W. Davison Ave., Detroit 23, Mich.



Mono-Dyne trade names a new assembly of motor-driven tractor and pushbutton controls to operate with a 4-wheel unit carrying a 12-volt storage battery, a required number of load-carrying trailers coupled back of the battery carrier and intermediate as well as rear-end auxiliary push buttons for control purposes. A spring-supported hinged antenna can be added to a train at front or rear or at both ends for safe operation in areas where the train might meet obstructions. Upon meeting one the hinged element of the antenna moves downward against the spring action to shut off power. When the obstruction is removed this element returns to operating position and the train resumes its movement.

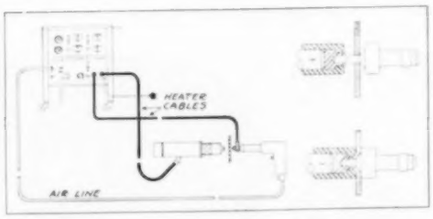
The equipment is available to specification for operation on a given monorail track. Or a complete assembly can be supplied including the track. Each installation is designed to meet given requirements for train travel by itself between dispatching and receiving stations in reversing action on an open-end track layout or in a one-way or two-way closed loop. A typical installation in Detroit handles bananas between a railroad track and processing and storage. Four trains are able to unload and handle three carloads per hour.

Each tractor unit in this installation is provided with two 12-volt Exide-Ironclad batteries and charging equipment at a station forming a part of the track circuit. One battery is continuously on charge while the other is at work. Change-over can be made in about five minutes. The tractor and its battery-carrying trailer are run into an empty spur track where the trailer is unhitched but not disconnected electrically. Then the tractor is run to an adjacent spur where a trailer and charged battery are waiting. Here the battery connections are interchanged so the spent battery can be put on charge and the new one connected to drive the tractor.

BREVITY—Identify by IEN-7536 if you write the maker

DIMPLING . . Heated dies, punches and controls to form rivet holes

Source: ZEPHYR MFG. CO.
203 Hindry Ave., Inglewood, Calif.



Ram Coin trade names a new form of dimpling to shape punched holes in metal sheets for flush-head riveting. Special punches and dies with provision for electric heating are employed in stationary and portable equipment to perform the dimpling operation. An inner blank holder presses against the material immediately surrounding the punch to set up compression. This unit retracts as the punch advances and holds to effect a coining operation that results in exact angles and duplication from one piece to the next.

The work shows no evidence of cracking. Air gap between sheets nested into one another is negligible. Heat is conducted through the tools into the work under exact control to promote the action. The same control unit provides connection for pressure lines to the equipment that performs the dimpling operation. Provision is made to operate cold for certain materials that dimple best without the heat. The company is prepared to provide engineering assistance in application of the process and the available equipment.

Catalog No. 8, 36 pages, illustrates and describes the operation in detail, shows the tools available for the purpose and presents the various types of control panel. It includes assembly diagrams of the equipment and the control with data on punches and dies for given purposes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 88 and 89 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Chief Engineer

"The general summary of information in Industrial Equipment News is unsurpassed by that in any other publication."

Departments

READER SERVICE FORM — Pages 16-17 and 88-89
To assist you in securing the information you want

SUBJECT INDEX — Pages 102-103
With our four-step suggestion on how to use it

TRY WRITING ONE — Page 4
Every plant man can be an author if he wishes

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 74
Condensed reviews of current manufacturers' catalogs

"I WISH I HAD" — Page 104
Requests we cannot answer, printed in the hope you can

Our Selections in This Issue

CALCULATING — Page 49
Quality monitor signals correct inspection procedure

CLAMP — Page 10
Applies in hole to secure metal sheets for riveting

CLEANING — Page 65
Descaling solution for application on hot steel forgings

CONDUCTOR — Page 2
Electric wire and cable in miniaturized assemblies

CONVEYING — Page 21
Tube enclosed chain with load supports at 6-in. intervals

DUST COLLECTING — Page 34
Filter panel delivers 99.95 per cent of clean air

ELECTRIC POWER — Page 26
How to use it described in 20 sets of instruction data

GENERATOR — Page 14
Diesel driven unit replaces battery on electric truck

MANAGEMENT — Page 28
Booklet for employees tells facts about inflation

MILLING — Page 81
Profile machine for use on jet compressor blades

REFRIGERATING — Page 70
Absorption unit chills water for heat exchange use

SEALING — Page 94
Synthetic rubber in extruded form for metal joints

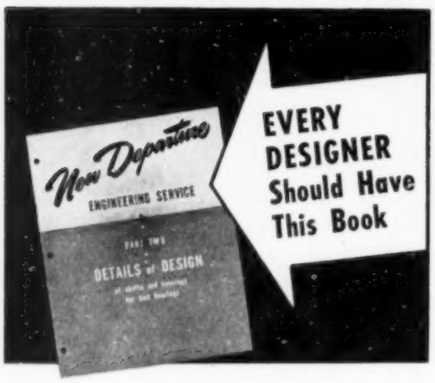
W. E. Tisch, Editor & V. Pres.
F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* _____
- ☐ *Production Mr.* _____
- ☐ *Engineering Mr.* _____
- ☐ *Product Design Mr.* _____
- ☐ *Purchasing Mr.* _____
- ☐ _____

BREVITY—Identify by IEN - 7537 if you write the maker



Details of Shaft and Housing Design for the application of ball bearings. Such subjects as: Proportions and finish of seats and bores; use of adapters; "straight through" and shouldered housings; locating and clamping methods; design to aid disassembly, etc., etc.

Ask for booklet DD. New Departure, Bristol, Conn.

Nothing Rolls Like a Ball . . .

NEW DEPARTURE

BALL BEARINGS

BREVITY—Identify by IEN - 7538 if you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

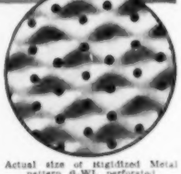
Technical Coatings Since 1895

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 7539 if you write the maker

SOUND ABSORBED in Modern Library

by ACOUSTICAL FINS made of Rigidized DESIGN STRENGTHENED Metals



Actual size of Rigidized Metal pattern (I-W), perforated

The ultra-modern Youth Library at Fitchburg, Massachusetts, solves its noise problems by using acoustical fins of RIGIDIZED perforated steel encasing an insulating material to provide sound absorption. RIGIDIZING increases sound absorption by creating slight "dishes" at perforation perimeters. Versatile RIGIDIZED METALS may be adapted to many other product applications to absorb sound, add beauty, CONSERVE CRITICAL MATERIALS, and provide structural strength. Investigate their possibilities in your requirements today.

Send for RIGIDIZED METALS IDEA HANDBOOK TODAY

Rigidized Metals Corporation

664 OHIO STREET, BUFFALO, N. Y.

BREVITY—Identify by IEN - 7540 if you write the maker

CONNECTOR . . Insulated conductor encloses trolley shoe on monorail

Source: CLEVELAND CRANE & ENGINEERING CO. 1137 E. 283rd St., Wickliffe, Ohio

Tramrail Safe-Powr-Bar is a new assembly of insulated conductor bars and flexibly-supported graphite collector shoes for safe electrification of overhead equipment. The new parts can be applied on all of the company's new Tramrail installations. They can be employed also as replacement for open-bar electrification with motor-driven hoists, trolleys, cranes.

U-shaped conductor bars are enclosed in an insulated plastic covering and are mounted in inverted position as shown on a typical track section to the left in the illustration. A graphite shoe is mounted on a vertical metal support that rides inside a plastic housing in connection with a torsion spring. This spring maintains contact between the shoe and both side walls of the conductor bar. At the same time spring-backed link supports for the plastic housing hold the shoe upward for contact on the under face of the bar.

Test installations indicate service life of the shoe to be 2,000 miles or better as compared with 400 miles maximum for collector-wheel assemblies previously employed by the company. The graphite shoe itself possesses lubricating qualities to give it the long life and to minimize wear on the bar.

BREVITY—Identify by IEN - 7541 if you write the maker

CONDUCTOR . . Electric wire and cable in specified miniaturized assemblies

Source: TENSOLITE INSULATED WIRE CO. 199 Main St., Tarrytown, N. Y.

The company announces addition of new Tensulated wire to its miniaturized line. Each wire consists of four strands of No. 40 copper wire inside an insulating jacket produced by applying a plastic film as a parallel multi-wrap and then heat sealing it under pressure. The insulation has the appearance of being extruded and is available in 15 colors.

The finished wire can be specified in many combinations of twisting and braiding, as well as in single strands, and can be finished and protected with metal or fabric braid. The finished conductor is suited for use in temperatures between minus 40 and plus 212 deg. F. The insulation will withstand an average of 500 volts per mil of wall thickness before breakdown. Standard minimum thickness is 10 mils.

The wire itself is made of copper and can be supplied bare, tinned or silver plated. Braiding can be supplied in cotton, rayon, nylon or the company's own plastic-film-covered glass yarn. The complete line, referred to the single conductors, includes wires with 4 to 105 strands of No. 40 to No. 20 AWG copper. Samples and detail information are available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 7542 if you write the maker

For Low Height Repair Work get a....

DUFF-NORTON "LO-HITE" JACK

Easily spotted in places inaccessible to other style jacks—the "Lo-Hite" will raise a 30-ton load up to 2". Pump is independent, and can be operated in an open area while jack is spotted in confined space under load.

Write for Bulletin AD-3G today.

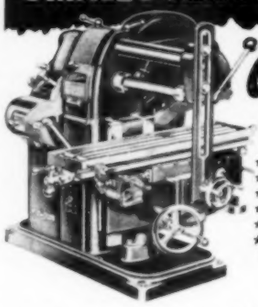
THE DUFF-NORTON MANUFACTURING CO.

Main Plant and General Offices, PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.

"The House that Jacks Built"

BREVITY—Identify by IEN - 7543 if you write the maker

DOUBLE SAVINGS ON SMALL PARTS MILLING!



Atlas MILLING MACHINE

- ★ Timken Bearing Spindle
- ★ Backgeared Power
- ★ Complete V-Belt Drive
- ★ 8 Spindle Speeds
- ★ 4½" x 18" Ground Table
- ★ Reversible Automatic Power Longitudinal Feed

1. Low initial cost. 2. Low operating costs.

The Atlas miller frees larger machines from uneconomical handling of small jobs. Saves many hours monthly on set-ups—saves on power and operating costs.

It handles the full range of operations, mills to close tolerances fast and efficiently—as dependably as larger machines.

Send today for detailed catalog. Here's real help—available promptly — for your tool room or production line.

FOR YEARS Atlas

ATLAS PRESS CO.
891 PITCHER ST.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 7544 if you write the maker

PACKS A Wallop!

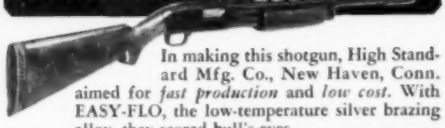
KNOCK fire out in seconds with this Kidde CO_2 extinguisher. Just point... pull the trigger ...and the fire's out! Write for free literature.

Walter Kidde & Company, Inc.
836 Main Street, Belleville 9, N. J.

Kidde

BREVITY—Identify by IEN - 7545 if you write the maker

EASY-FLO HITS THE MARK IN GUN PRODUCTION



In making this shotgun, High Standard Mfg. Co., New Haven, Conn. aimed for *fast production* and *low cost*. With EASY-FLO, the low-temperature silver brazing alloy, they scored bull's-eyes.

RIB brazed to RECEIVER

by induction with EASY-FLO flat stock preplaced—time, 25 seconds.

REAR BLOCK brazed to RECEIVER

by induction with 4 pieces of EASY-FLO wire preplaced—time, 28 seconds.

ALSO—ACTION BAR brazed to FOREHAND TUBE in 5 secs.—COLLAR brazed to MAGAZINE TUBE in 5 secs.—VENTILATED RIB and COMPENSATOR joined to BARREL in 2½ mins. SCORE: 5 clean, strong assemblies in 5 minutes total time.

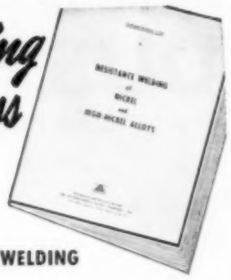
WRITE FOR BULLETIN 20—and get the whole EASY-FLO story plus useful design and production information.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 7546 if you write the maker

Just coming off the press



...FOR PRACTICAL HELP ON RESISTANCE WELDING

This new INCO Technical Bulletin contains up-to-the-minute data on Spot, Seam, Projection, and Flash Welding, and Resistance Brazing of Monel, Nickel and Inconel. It covers details of proper equipment, preparation of metals, time and current factors, size of electrodes, and pressure.

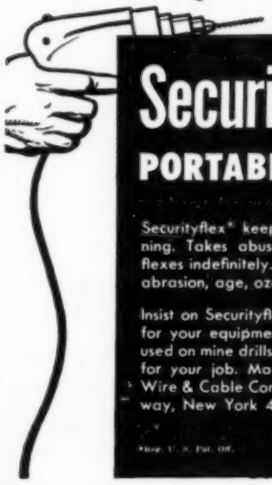
Use these facts to assure high-quality welds, less scrap loss; and to take full advantage of the unique corrosion resistance, high-temperature stability, strength, and toughness of the INCO Nickel Alloys.

Check the IEN request card for your *free* copy.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

BREVITY—Identify by IEN - 7547 if you write the maker

it's TOUGH! it's dependable



Securityflex PORTABLE CORD

Securityflex* keeps equipment running. Takes abuse, resists kinking, flexes indefinitely. Resists oil, water, abrasion, age, ozone.

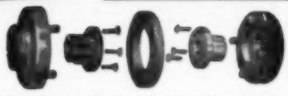
Insist on Securityflex Portable Cord for your equipment. So rugged it's used on mine drills. It's the right cord for your job. Made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 7548 if you write the maker

Browning

FLEXIBLE COUPLINGS WITH SPLIT TAPER COMPRESSION BUSHINGS



(1) Bushed type—eliminates expensive reboring—wide bore selection
(2) Completely machined from solid steel or malleable castings
(3) Compact-maximum strength
(4) Neoprene insert-added strength, resiliency, shock absorbing, oilproof, greaseproof, heat resistant
(5) Easy to mount, easy to remove, positive locking clamp fit, 1/6th to 40 H.P. range—available from stock.

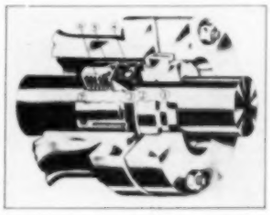
Write for free Literature and the name of the Browning Gripbelt distributor near you

BROWNING MANUFACTURING COMPANY
INCORPORATED
1950 BROWNING DRIVE MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 7549 if you write the maker

SEALING . . Lapped ring assembly prevents axial leakage on rotating shafts

Source: CRANE PACKING CO.
1815 Cuyler Ave., Dept. E 27, Chicago 13, Ill.



Corrosive fluids, at temperatures to 500 deg. F., are prevented from leaking along a rotating shaft by this new T-9 mechanical shaft seal. The design is available for shafts upward from ⅜ in. in diameter, each being individually engineered for the required size, temperature and corrosive application. The seal assembly applies against leakage from left to right as it is shown in the illustration.

A metal cup made of non-corrosive material is secured to the shaft by set screws. It contains a set of springs bearing axially against a non-corrosive metal disc which backs up a wedge-section chemically-inert Teflon ring. This ring rides against and under a carbon ring. It is held in place in the metal cup by indentations which engage depressions in the ring. The right-hand face of the carbon ring is lapped to match the lapped face of the stationary metal ring that is held in place in the equipment housing to complete the seal.

Pressure from the sealed fluid adds its action to the springs to hold the Teflon ring in sealing position on the shaft back of the carbon ring so this complete rotating portion of the assembly is sealed with the shaft as well as held to it by the set screws. The lapped-face contact between the carbon and metal rings prevents leakage from around rotating assembly.

BREVITY—Identify by IEN - 7550 if you write the maker

CONTROL . . Electronic regulator governs temperature in jet aircraft

Source: VAPOR HEATING CORP.
78-82 E. Jackson Blvd., Chicago 4, Ill.

Three circuits for aircraft heating are served by this new No. 50-C-38 electronic regulator. One controls the aircraft's cabin temperature. The second limits the maximum temperature of engine-heated air supply to the cabin. The third employs a mercury contact thermostat to limit temperature of the air to defrost the windshield.

Minute signals from the temperature-sensing pick-ups are amplified by the new control and are fed to a discriminator circuit which selects the correct relay. This relay actuates the by-pass valve actuator causing a damper to move in correct direction to change temperature in the cabin in accordance with the selected temperature at any point between 40 and 100 deg. F.

Dimensions, including a shock mount, are 6 in. in width, 5⅝ in. in depth, 6⅝ in. in height. Weight is about 4½ lb. including the 0.56-lb. mount. Adjustments are made at screws on the housing above the connectors.

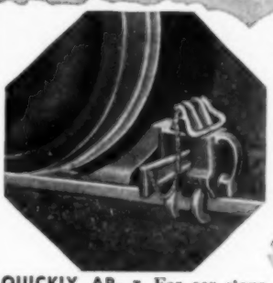
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7551 if you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

THE SAFE WAY . . . .

To Protect Lives and Guard Against Property Damage



IPCO M & M RAIL CLAMPS

QUICKLY APPLIED OR REMOVED . . . Guaranteed AGAINST BREAKAGE.

For car stops, on loading platforms, temporary sidings, cars on grades, and traveling cranes . . . Used and recommended by leading Steel Companies, Mfg. Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR BULLETIN F-41

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 7552 if you write the maker

LUBRICATION ECONOMY

LUBRIPLATE SAVES 7 TIMES ITS COST!

This remarkable saving was reported to us by the Wolverine Shoe & Tanning Corporation of Rockford, Michigan. Their unsolicited letter stated—*"For every dollar we pay for LUBRIPLATE Lubricant No. 300 we save $7.00 in chain replacements"*. You, too, can enjoy the savings made possible with LUBRIPLATE Lubricants.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 7553 if you write the maker

TURNOVER LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, underfoot hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over week-end (no plant tie-up) with 'Incor' 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough 'Incor'* curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION
Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston
Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans
New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 7554 if you write the maker

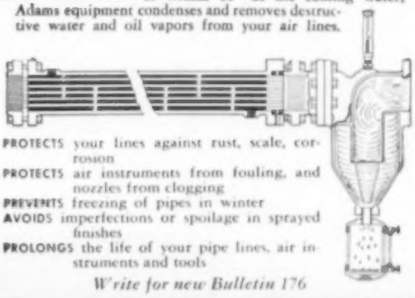
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 7555 if you write the maker

WHY HESITATE ?

IT'S EASY TO SWITCH TO MOLYBDENUM HIGH SPEED STEELS *

- It is readily available from manufacturers and warehouses.
- It makes as good a tool—or better—than a tungsten type.
- It saves money.
- It conserves tungsten for uses in which it is really needed.

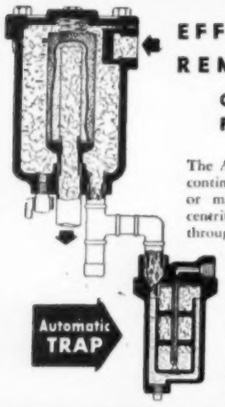
*Ask your supplier—and write for our free booklet "MOLYBDENUM HIGH SPEED STEELS"

Climax Molybdenum Company
500 Fifth Avenue · New York City

HSB

BREVITY—Identify by IEN - 7556 if you write the maker

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

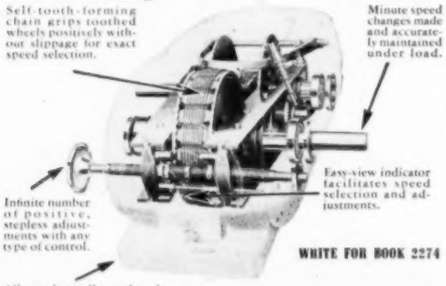
R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 7557 if you write the maker

Why all industry uses P.I.V.

Link-Belt's P.I.V. is the variable speed drive that is not dependent on friction for power transmission. That's why only P.I.V. gives you all these advantages.



WRITE FOR BOOK 2274

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, factory branch stores and distributors in principal cities. 12,319

LINK-BELT
P.I.V. VARIABLE SPEED DRIVE

INDUSTRIAL EQUIPMENT NEWS

ECA · The Original IEN Founded 1931 · NBP

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Circulation and Reader Service Mgr.	A. J. Granick
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Editorial Assistants
M. L. Welsh; A. J. Willis

Circulation and Reader Service Assistants
B. Goldstein; V. Puzzio

Business Department Assistants
H. Benjamin; R. Irish; E. Kroll; B. Sullivan

These are our local offices:		*Telephone*
Atlanta (6)	3 Villa Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	Harrison 7-3730
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461 Eighth Avenue, New York 1, N. Y.

What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 AUGUST, 1951 No. 8

Try Writing One

An excellent way to solve most any problem in product design, production, plant operation, is to put it in writing. Set down the conditions causing the problem in orderly manner, factually and with as little personal opinion as possible. Consider these conditions and list the things that might be done. Study these things and write your recommendations.

There you have the procedure from which originate a great many of the articles that appear in the trade papers. Doubtless you read a number of them each month looking for suggestions to help in your own problems. Perhaps you have acted upon them from time to time. Perhaps you have clipped certain of them for future reference. But have you ever tried writing one yourself? It is good to try. Advantages can accrue to you over and above finding a solution to a problem. For example—

A production engineer whose duty it was to assure delivery of complete sets of parts for a machine assembly was continually in hot water because of shortages, no matter how many times he counted and checked. He determined to make notes of each of them from the start of the original parts in production to the time they reached assembly.

These notes pointed inescapably to the fact that poor work causing parts rejection and ensuing shortages was a function of accuracy and condition of the press tools with which most of the parts were made.

He wrote a report for his superior. In it he recommended extension of inspection authority to cover manufacture and maintenance of the production tools as well as operating condition of the machines in which they were used. The report was written simply, clearly. Its conclusions were logical. It cut through and cleared up many standing oral arguments on the subject. It not only was adopted, but also he was promoted.

The engineer, now chief inspector, thus had solved a problem and improved his position at the same time by putting the problem in writing. He could have stopped there but a friend suggested he turn the report into a trade paper article.

He wrote the article, secured approval of his own people for its publication. A trade paper bought it and published it in due course. This made the original report a source for help to many plant men. The engineer and his company secured favorable publicity. He was provided with funds to purchase his lady an orchid.

Industry in general would profit if more men were to do as this engineer did and "put it in writing," just as you could do by relating for publication the "know-how" you have accumulated on your own activities.

One company, Worthington Pump & Machinery Corp., recognized the possibilities long ago. It appointed a committee of three to pass on submitted articles by its employees. It awards $25 for each accepted article, adds an equal amount upon publication in a trade paper. In about twelve years, according to Printers' Ink, it has paid $15,000 to 90 employee authors.

W. E. Irish.

BREVITY—Identify by IEN - 7558 if you write the maker

HIGH EFFICIENCY

DUST CONTROL

with DUCLONE COLLECTORS

- Because each DUCLONE COLLECTOR is tailor-made for specific use . . . in proper balance — in shape, size of clone and vortex — in relation to air velocity.
- Because scientifically designed and built to eliminate all destructive eddy currents and resistance to centrifugal action.
- Because only DUCLONE is equipped with inlet control and adjustable vortex shield to give highest performance efficiency.
- Expertly engineered . . . simple and sturdy construction . . . assure long, continuous, heavy duty service.
- *A DUCON engineer will gladly confer with you on any dust problem.*

Write for descriptive, illustrated catalog DC49-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 7559 if you write the maker

SAVE TIME . . . STORAGE SPACE . . . AND AVOID SPILLAGE

with TELLEVEL AUTOMATIC BIN-LEVEL CONTROL

Let TELLEVELS watch your bin-level for you . . . Avoid empty or overflowing storage bins.

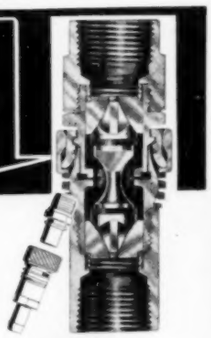
Mount a TELLEVEL near the top and another near the bottom of your storage bin . . As the material-level falls or rises, the light pendant is pushed aside . . . Automatically *starts or stops* conveyor, elevator or pump . . . Can be furnished for bulk materials or liquids.

Check possible uses. Write now for Bulletin No. 440.

STEPHENS-ADAMSON MFG. CO.
Tellevel-Bin Level Controls · Saco Speed Reducers · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings
231 RIDGEWAY AVE., AURORA, ILLINOIS

BREVITY—Identify by IEN - 7560 if you write the maker

6 REASONS why American industry specifies WIGGINS



★ Craftsmanship
★ Integrity
★ Uniformity
★ Low pressure drop
★ Leak proof seal
★ Engineering Service

Over many years, Inst-O-Matic has acquired a value far above its mere mechanical qualities, a value proved by its acceptance throughout industry and in all branches of the armed services.

EQUIPMENT MANUFACTURERS

Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

Basic Sizes: ¼", ½", ¾"; intermediate sizes where needed. Unconditionally guaranteed leak proof from zero to maximum recommended pressure.

Wiggins

For proof of performance, write for name of nearest representative to E. B. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

INST-O-MATIC COUPLINGS

BREVITY—Identify by IEN - 7561 if you write the maker

YOU ASK FOR IT...

HERE IT IS!

A BETTER COUPLING

LOVEJOY L-R FLEXIBLE COUPLINGS

You wanted a better coupling . . . one that would correct greater misalignments—absorb vibration, shock, backlash and surge. You wanted one that would not cause wear on shafts and bearings and yet required no lubrication. You wanted a coupling that would not require a shutdown for changing cushions . . . one that would give you long, trouble-free service. Well, now you get all this and more with Lovejoy Flexible Couplings. Cushions are available for every duty . . . 1/6 to 2500 H. P. Lovejoy Flexible Couplings were designed for YOU . . . to give you better coupling service. Be sure to use them on your equipment.

Write for catalog and Quick Finding Selector Charts.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake St., Chicago 44, Illinois

Also Mfrs. Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions.

BREVITY—Identify by IEN - 7562 if you write the maker

GET SERVICE *with* SEALMASTER BALL BEARING UNITS

Machines run longer smoother—*with less maintenance*—when they're equipped with SealMaster Ball Bearing Units. This exclusive combination of money-saving features tells why:

- **PERMANENTLY SEALED** to exclude dirt and retain grease over long periods.
- **SELF-ALIGNING** in any direction without seal distortion yet no outer race rotation in housing.
- **PRE-LUBRICATED** at the factory—ready for use in your plant.

SEALMASTERS are available in Pillow Blocks, Flange Units, Hanger Units, Cartridge Units, Flange-Cartridge Units and Take-Up Units.

Write for CATALOG 845 which lists dimensions and load ratings on the complete SealMaster line.

See for Yourself Why SEALMASTERS Excel: SEALMASTERS are designed to give satisfactory service, operate quietly and require minimum attention over long periods. Get complete data from catalog 845.

BEARING DIVISION

STEPHEN S-ADAMSON Mfg. Co.

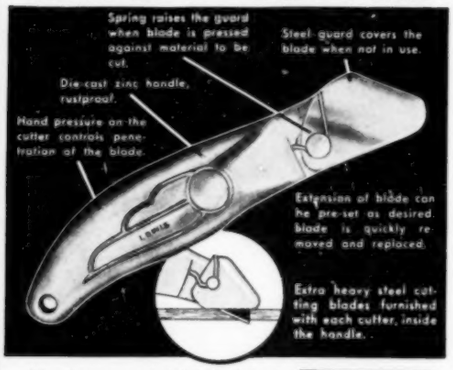
231 Ridgeway Ave., Aurora, Ill. • Los Angeles, Calif. • Bellville, Ont.

Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 7563 if you write the maker

A New Invention . . . Safe . . . Different

LEWIS Automatic SAFETY CUTTER



Here is a new patented knife that cuts swiftly, surely, safely . . . yet protects the user from injury. Always safe because the blade is guarded — always ready to use because there's nothing to adjust.

$1.50

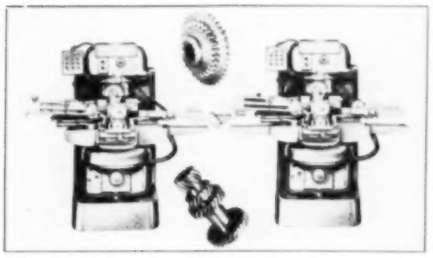
FLASH BOX OPENER CO., Inc.

52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 7564 if you write the maker

GEAR CUTTING . . Automatic line to handle and shave cluster gears

Source: NATIONAL BROACH & MACHINE CO. 5602 St. Jean Ave., Detroit 13, Mich.



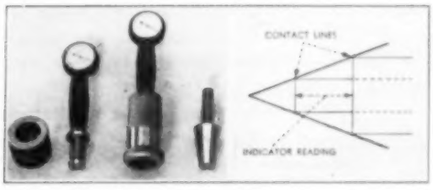
Each gear in a cluster assembly is shaved in turn as the cluster is moved automatically from one machine to the next in a production line including the company's new automatic handling equipment. The operator loads a magazine at the left-hand side and removes finished work at the last machine in the line to the right. The machine engages work that is positioned for it by its magazine.

Each intermediate magazine receives and places work from the preceding machine. The unloading chute of the last machine stores the completed work until it becomes completely filled, in the event that the operator does not remove any. Then the machines stop automatically until this chute has been cleared. A gage at the entrance to the first machine prevents accidental inclusion of an oversized work piece.

BREVITY—Identify by IEN - 7565 if you write the maker

GAGE . . Dial indicator to compare taper with a master

Source: DOW MECHANICAL CORP. 8-12 Central St., Thompsonville, Conn.



Tacomp trade names a gage that has been on the market for some time to check interior and exterior tapers against master rings and plugs. It is available now with special interchangeable gage sets. They work with the dial indicator to read deviation from a master setting of a tapered bore or external surface. A reading of 0.001 in. on the indicator equals 27 seconds on the included angle in the units shown in the illustration.

They apply in measuring tapers in parts approximately 4 in. in length and 2¾ in. in diameter at the major end. The gage can be specified for tapers to less than 10 seconds of error. It is being made at present for tapers as small as ⅛ in. in major diameter to as large as 5 in. in major diameter.

The gage applies two contact lines on the taper. Their distance apart, as compared to a master, is determined on the indicator as a measure of the taper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7566 if you write the maker

TROMBETTA SOLENOID CO.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

BREVITY—Identify by IEN - 7567 if you write the maker

For heating water, oils, tars, greases, plating baths, pickling solutions, etc.

"Packaged" Chromalox Electric Heaters, combining heater and thermostat, are the economical, efficient solution to many heating problems. Uses include: heating tanks, drums and process kettles; melting greases, asphalts and similar viscous fluids; heating degreasing, pickling and plating baths. Available with sheaths of copper or steel, and with lead for use in corrosive solutions. Types, sizes and ratings to meet your needs.

For *all* the facts get CATALOG 50

It gives full data on thousands of time, money and labor-saving Chromalox Units.

IB-14

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See *Chromalox Heating Units Advertisement, Page 11*

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 7568 if you write the maker

Aeroquip

FLEXIBLE HOSE LINES and DETACHABLE FITTINGS

Cut Costs 9 Ways

1. Reduce inventory.
2. Reduce expensive downtime.
3. Permit you to salvage old hose lines.
4. Make possible immediate repair of hose line failures.
5. Eliminate the need for factory assembled hose lines.
6. Permit you to make hose lines to desired length as required.
7. Permit you to replace rigid tubing failures on the spot.
8. Eliminate the need for rigid tubing forms and jigs.
9. Permit you to make hose lines for mock-up installations rapidly.

AEROQUIP CORPORATION
JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

BREVITY—Identify by IEN - 7569 if you write the maker

ALLIS-CHALMERS Induction Heaters

New Film SHOWS HOW TO CUT COSTS

Annealing • Brazing • Soldering • Hardening

GET IDEAS on improving products, speeding production, cutting costs. New 16 mm. color-sound film shows on-the-job applications of induction heating.

See how one manufacturer raised production to 3600 units per hour! See many other case histories.

Arrange for free showing—fill out coupon below. Get new solutions for heating problems. Send the coupon today!

ALLIS-CHALMERS

ALLIS-CHALMERS, 909A SO. 70 ST. MILWAUKEE, WIS.

☐ Please send print of 16 mm. color-sound film "Induction Heating, Industry's Modern Tool."

☐ Please send me booklet describing film.

Name _____ Title _____

Firm _____ Address _____

City _____ State _____ A-3433

BREVITY—Identify by IEN - 7570 if you write the maker

KEEP THINGS *MOVING* with a

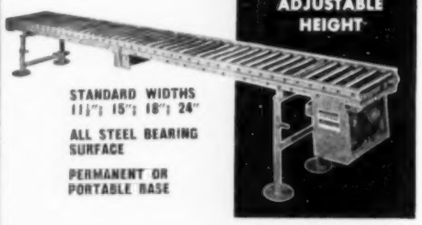
METZGAR "LIVE ROLLER" POWER UNIT

4 STANDARD SIZES

ADJUSTABLE HEIGHT

Handles the jobs that are too "tough" for powered belt units. Undamaged by sharp corners or rough edged work. Supplies dependable power in gravity lines.

Work can be slowed or held without stopping conveyor.



STANDARD WIDTHS 11½"; 15"; 18"; 24"

ALL STEEL BEARING SURFACE

PERMANENT OR PORTABLE BASE

For Full Specifications and Prices write for Folder No. 1249

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 7571 if you write the maker

This Simple

AMERICAN MONORAIL SYSTEM
Saves $12,800 Annually in Handling Costs

A saving of 64 man-hours per day (2 shifts) resulted when this unique, simple American MonoRail Overhead Handling System was installed. The entire cost was less than $10,000—so the system paid for itself in less than a year.

You, too, can profit by American MonoRail Overhead Handling. Just drop us a note—we'll be glad to discuss your problem. No obligation, of course.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 7572 if you write the maker

NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

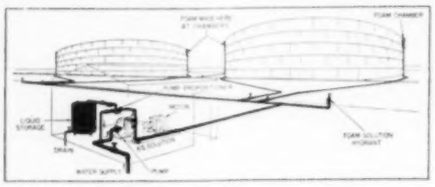
Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 7573 if you write the maker

EXTINGUISHING . . Foam equipment for fires in stored flammable liquids

Source: WALTER KIDDE & CO.
673-77 Main St., Belleville 9, N. J.



The company announces addition of equipment for stationary installation to store, mix and deliver mechanical foam to combat fires in stored flammable liquids. The equipment includes a motor-driven proportioning pump, storage for the foam liquid and final means to pull air into the delivery line carrying the foam and water for delivery over the burning liquid. Each installation is made to meet given requirements. The equipment is adaptable to large or small storage tanks.

BREVITY—Identify by IEN - 7574 if you write the maker

PAINTING . . Liquid primer for metal surfaces prior to painting

Source: GENSCO CHEMICAL DIVISION
1830 N. Kostner Ave., Chicago 39, Ill.

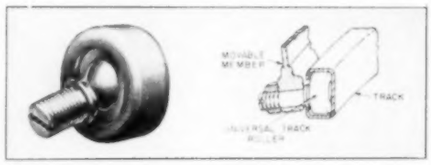
Single gallons list at $7

Rustygon is a new chemical supplied in liquid form for application by brush, spray, dip or by wiping with a rag over ferrous metal surfaces. The liquid dissolves rust, seals the surface against further corrosion. It dries in about an hour, ready to receive a coat of finishing paint. Application can be made on dry or damp surfaces. The dry film expands and contracts with the metal to prevent peeling or cracking. Coverage is about 1,200 sq. ft. per gallon.

BREVITY—Identify by IEN - 7575 if you write the maker

WHEEL . . Bronze bearing unit is flexibly mounted on steel studs

Source: MAK-ALL CO.
32-16 35th Ave., Long Island City 3, N. Y.



Ball action between this new wheel and its threaded supporting stud provides for angular movement through 15 deg. as well as for rotary motion. The wheel has a load capacity of 1,000 lb. in combined thrust and radial directions. Outside diameter measures $\frac{11}{16}$ inch. Width is 11/32 inch. The stud is ¼-in. 28-thread design and is made of chromium-molybdenum steel. The bronze bearing is packed with lubricant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7576 if you write the maker

Use 'Bestolife

No matter what kind of connection you have, 'Bestolife will set it up snugger, tighter and longer than any compound you have ever used—or your money back. On air, gas, or fluid lines—at any pressure—at any temperature, 'Bestolife has been doing a top job for twenty years. Try it. See your supply dealer or write for literature and prices.

JOBBERS AND DEALERS WANTED

I. H. GRANCELL
1601 EAST NADEAU STREET
LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 7577 if you write the maker

Precision **ROD CUTTING at High Speed**

with the New **DI-ACRO ROD PARTER**

DI-ACRO POWER PARTER

The DI-ACRO Rod Parters further increase the applications of "DIE-LESS DUPLICATING" as a cost cutting, time-saving production technique.

Do you require precision?—DI-ACRO Rod Parters hold tolerance to .001" on duplicated cuts. The ends are square, and roundness is maintained.

Do you want speed?—The Rod Parters exceed outputs of other methods with equal accuracy, on rods and bars up to ½". Torrington Roller bearings incorporated in an exclusive multiple leverage arrangement provide remarkable ease of operation.

DI-ACRO Power Parter has air cylinder cushioned for quiet and efficient operation. Each cutting cycle obtained with 4-way foot valve—leaving operator's hands free.

"PARTS OFF" MANY MATERIALS

All Hot and Cold Rolled Rods • Stainless Steel • Copper
Chrome Molybdenum • Brass • Aluminum • Bi-metals
Many Types of Plastics • Fibre • Rubber • Wood

GET "DIE-LESS DUPLICATING" CATALOG! Shows parts duplicated by DI-ACRO Benders, Brakes, Shears, Rod Parters, Rollers, Notchers, Punches.

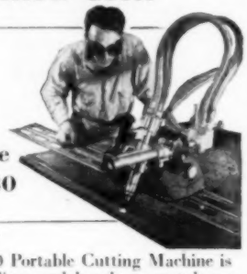
O'NEIL-IRWIN
310 8th Ave.
Lake City, Minn.

NOTCHERS | PUNCHES | BENDERS | BRAKES | ROLLERS | SHEARS | ROD PARTERS

BREVITY—Identify by IEN - 7578 if you write the maker

Speed Production . . . Cut Fabrication Costs

With this Low-Priced Oxy-Acetylene Cutting Machine OXWELD CM-30



The OXWELD CM-30 Portable Cutting Machine is for cutting straight lines and bevels on metals up to 4 in. thick. It also will cut circles from 2¾ to 96 in. in diameter, and can be hand guided for simple shapes.

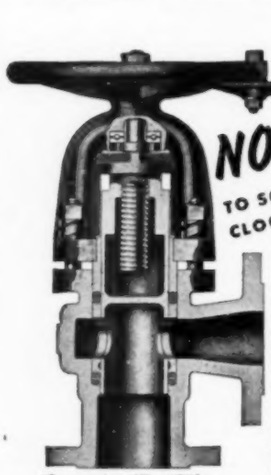
Convenient to Use

The CM-30 can be operated either on lightweight track for straight-line cutting, or on the work itself for cutting circles.

Write for a descriptive folder.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN - 7579 if you write the maker



NO SEAT!

TO SCORE . . . WEAR . . . CLOG . . . AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

*Cross section of Type "B" Seat-less Angle Valve, Flanged.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila. 18, Pa.

YARWAY BLOW-OFF VALVES

BREVITY—Identify by IEN - 7580 if you write the maker

STAYNEW PIPE LINE FILTERS

ELIMINATE MOISTURE OIL DIRT PIPE SCALE

Tests prove that Staynew Filters often save their entire cost in a few weeks. By preventing the passage of foreign matter, they prevent excess wear, costly freeze-ups, damage to materials and interference with processes.

Exclusive Double-Action Principle Provides:

MECHANICAL SEPARATION—Deflector Cup drives foreign matter to bottom of container.

FILTRATION—Air or gas rises thru the original Radial Fin Insert which removes the lighter material.

DOLLINGER PROTECTOR STAYNEW FILTERS

DETAILS ON REQUEST

DOLLINGER CORPORATION

3 CENTRE PK., ROCHESTER 3, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 7581 if you write the maker

ENDS ALL SLIPPING HAZARDS *in a County of San Diego Hospital!*

PABCO GRIP-TREAD MASTIPAVE

Non-Slip—Wet or Dry

AMERICA'S No. 1 LOW COST LONG-LIFE FLOOR COVERING

"Before we installed Pabco Grip-Tread Mastipave" says D. R. Sloan, Superintendent, Edgemoor Farm, County of San Diego, California, "we had considerable trouble with fractures due to patients slipping on concrete floors. Mastipave has entirely eliminated these accidents. For this feature alone, Mastipave has paid for itself.

"The nurses and attendants speak very highly about Grip-Tread Mastipave, especially its ease and comfort underfoot. Low maintenance cost is a big factor, as once Mastipave floors are waxed, very little attention need be given them."

EVERY BUILDING NEEDS PABCO MASTIPAVE

For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave costs little, looks good, wears even better! Grip-Tread is sold in roll goods only—regular Mastipave is available in roll goods and tiles.

PABCO

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

(Mail to Dept. E, nearest office)

PABCO PRODUCTS, INC.

New York 16 Chicago 54 San Francisco 19

BREVITY—Identify by IEN - 7582 if you write the maker

WANT MORE EFFICIENT— LONGER LASTING STEEL STAMPS?

USE **"SAFETY" WEDGE GRIP LETTERS and FIGURES**

- No Spall
- No Mushroom
- More Service
- Knurled Grip
- Patented under No. 2,089,794
- Thumb Side Markings

Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available 1/16" to 1" characters.

Write for Bulletin LF-50.

M. E. CUNNINGHAM CO.

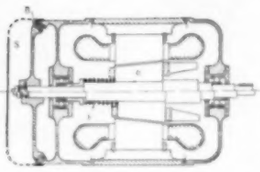
SAFETY STEEL STAMPS

99 East Carson Street • Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 7583 if you write the maker

MOTOR . . Tapered rotor design, 0.2 to 8 hp., with quick stop brake

Source: BROWN BOVERI CORP.
19 Rector St., Room 1215, New York 6, N. Y.



Tapered rotor and mating stator in this new three-phase induction motor produce a small axial movement, about 1/16 in., toward the small diameter in the stator bore when the motor circuit is closed. This moves the rotor shaft in axial direction in its sleeve mounting and releases a disc-type brake at the end of the motor. The shaft sleeve at the brake end is carried in a combination of thrust and radial bearing and is equipped with a shoulder that backs up a spring on the shaft.

The spring is compressed when the motor circuit is closed. It moves the rotor back and sets the brake the instant the motor circuit is opened. The illustration shows the action in released running position in the top half-section and in stationary brake-set position in the lower half-section.

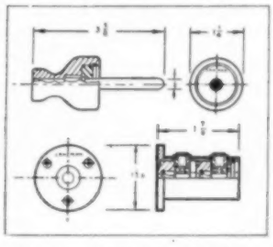
Brake action is approximately equivalent to line-starting action. There is no relative rotation between the spring, the sleeve, the shaft and the rotor since all are revolving together. Provision is made at a lock nut at the shaft end for brake adjustment. The lining can be replaced in the field.

The 1/16-in., or less, of axial movement will not affect a belt drive. It does require an axially-flexible coupling when the motor is direct connected. Two types are available in drip-proof and totally-enclosed assembly. The first ranges from 0.3 to 8 hp. The second is from 0.2 to 4 hp. Speeds range from about 800 to 1,700 rpm., depending on the number of poles and 110 and 240-volt motors are standard in stock. Other voltages can be specified.

BREVITY—Identify by IEN - 7584 if you write the maker

CONNECTOR . . Plug and receptacle designed to set up electronic circuits

Source: CANNON ELECTRIC CO.
3207-11 Humboldt St., Los Angeles 31, Calif.



Contact is made in this new electric Tandem-Type connector by inserting the brass silver-plated plug through two napkin-type rings made of silver-plated bronze. They form integral parts of the two terminals in the receptacle. The plug is fitted with an aluminum shell and is designed to take a No. 12 B & S stranded wire. The terminals in the receptacles are fitted with bushings bored ¼ in. in depth to 0.125-in. diameter. The holes are tinned for No. 12 wire to be solder connected.

The design was made initially for circuit set up on an electronic analog computor. It is suited for similar application on other units of electronic equipment. Current-carrying capacity is 35 amperes. The plug is known as No. CSB-1-22. The receptacle is No. CSR-1-31. Minimum flashover is 2,300 volts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7585 if you write the maker

CASE No. 419
Steel Products Plant
• •Name on Request

$21,000 SAVED YEARLY

installation paid for itself in six months . . . congestion eliminated

(a) Savings in Effort 15% (est.) (c) Savings in Space 20% (est.)
(b) Savings in Time 20% (est.) (d) Better Employee Relations

Saving in money . . . saving in time . . . saving in effort . . . saving in space . . . all accomplished by the installation of Logan Conveyors. You may find similar savings possible in your business. Write today for book, "Key to Lower Costs."

Logan Conveyors

LOGAN CO., 2000 CADIEUX ST. • LOUISVILLE 6, KY.

BREVITY—Identify by IEN - 7586 if you write the maker

GET THIS CATALOG NOW . . .

For valuable information on high-speed process measurement and control

Wherever unusual instrument speed is required in measuring, recording or automatically controlling, the vacuum tube actuated Speedomax is ready to do the job. L&N Catalog ND46(1) contains 40 pages of information on Speedomax Type G instruments. Details of ranges, specifications, types of equipment for particular jobs, etc., are catalogued in reference form. For specific help on a specific problem, feel free to call on an L&N engineer, or write to Leeds & Northrup Company, 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

Jrl Ad ND46(2)

BREVITY—Identify by IEN - 7587 if you write the maker

if you have a problem of *misalignment*

This new book will be a big help. It contains complete details on the entire Baldwin-Rex line of flexible couplings—Tru-Flex, Semi-Flex, Twin-Flex, Compound and Floating Shaft types. It gives you the facts on why Baldwin-Rex Couplings are truly flexible, are shock absorbing without backlash and are easy to install. The book includes all specifications, prices and horsepower tables.

Just use the coupon to send for your free copy today.

Baldwin-Duckworth Division of Chain Belt Company
Plainfield Street
Springfield 2, Mass. 51-408
Please send me Flexible Coupling Bulletin.
Name.....
Company.....Dept.....
Address.....
City.....State.....

BALDWIN·REX

BREVITY—Identify by IEN - 7588 if you write the maker

SAFE • STRONG • SECURE

Before specifying or purchasing open steel flooring check these exclusive features of Blaw-Knox Grating...

1. SAFETY underfoot at all times assured by twisted steel cross bars.
2. STRENGTH that only rigid "one-piece" Electroforged construction can provide.
3. SECURITY—no wobble, tilt or rattle caused by loose or lost screws, nuts, bolts.
4. EASY to maintain and paint . . . no sharp corners to clog with dirt.
5. MAXIMUM open area for light and air.

For complete data on Blaw-Knox Electroforged Steel Grating and Stair Treads write for Bulletin 2365.

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX *Electroforged®*
STEEL GRATING & STAIR TREADS

BREVITY—Identify by IEN - 7589 if you write the maker

BREVITY—Identify by IEN - 7590 if you write the maker

TRICO RENEWABLE FUSES Give You:

- 3 Times The Service
- Low-resistance Contacts
- Tamper-proof Protection
- Safe Time-lag
- Lifetime Outer Parts
- Link Protection And Support

TRICO "KLIPLOK" CLAMPS Reduce:

- Premature Fuse Blowings
- Unnecessary Shutdowns
- Lost Production
- Unnecessary Repairs
- Fire & Accident Hazards
- "Doubling-up" Fuse Links

WRITE FOR FREE BULLETINS NO. 1 AND 6

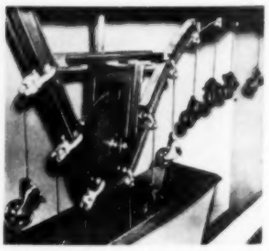
TRICO FUSE MFG. CO. Milwaukee, Wis.

BREVITY—Identify by IEN - 7591 if you write the maker

BREVITY—Identify by IEN - 7592 if you write the maker

CONVEYING . . Overhead cable unit operates on track in closed circuit

Source: E. W. BUSCHMAN CO.
4447 Clifton Ave., Dept. 20-B, Cincinnati 32, Ohio



New dip section has been added to the company's overhead cable conveyor with which suspended work pieces can be dipped into a tank and brought back out again in continuous movement. The cable is secured to trolleys on 12-in. centers. The load can be carried on this minimum center or on multiples of it. Curve radius is 9½ inches. Included angle is 60 degrees. Details are available on request.

BREVITY—Identify by IEN - 7593 if you write the maker

PROTECTING . . Rubber frame goggle to exclude gases, fumes, smoke

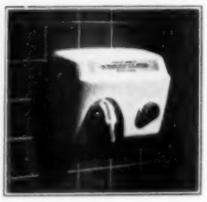
Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

No. 701 is a new rubber-frame goggle designed to provide a gas-tight seal on a worker's face. It is equipped with a head band secured in slots in the outer goggle frame. Screw-headed bolts on the front are made of stainless steel. Ventilating slots in the rubber frame are omitted to prevent infiltration of air. The unit can be employed alone or with the company's R-2000 or R-500 respirator.

BREVITY—Identify by IEN - 7594 if you write the maker

WASHROOMS . . Hot air blower replaces towels to dry hands and face

Source: NATIONAL DRYER SALES CORP.
614-18 W. Adams St., Chicago 6, Ill.



Timer controlled blower motor and electric heating element are energized for a 30-second interval upon pressing a button on the housing face of this new wall-mounting dryer. Heated air issues from a nozzle that can be rotated through a complete circle to blow upward for face drying as well as downward to dry the hands. The housing is made of rust-proof castings with porcelain enamel finish. Other parts are plated. The assembly carries a two-year guarantee and is approved by Underwriters' Laboratory, Inc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7595 if you write the maker

BREVITY—Identify by IEN - 7596 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 7597 if you write the maker

EVERY metal part you see in this fishing tackle is bonded to wood—as is each cork part. The bonds are made with PLIOBOND — Goodyear's rubberlike thermoplastic adhesive that "bonds anything to anything." In three years' use, the manufacturer has never had a bond failure!

PLIOBOND eliminates crimping or pinning together parts, simplifies his production operations without loss of product strength. All bonds were made using PLIOBOND at elevated temperatures, but PLIOBOND can also be used cold (wet) or by reactivation with solvent. It applies by roller coating, brushing, spraying or dipping—gives a quick set to a waterproof, chemically-resistant high strength bond with permanent flexibility.

Write today for full information to:

Goodyear, Chemical Division
Akron 16, Ohio

GOODYEAR

Pliobond—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

BREVITY—Identify by IEN - 7599 if you write the maker

IT PAYS TO CHOOSE

PARKER-KALON

QUALITY-CONTROLLED PRODUCTS

Cold-forged

WING NUTS

Parker-Kalon Wing Nuts are free from flaws, roughness and other imperfections. Holes are accurately made—threads uniform. The "squared-up" base allows nuts to be drawn up tight and flush with the surface of the work.

Cold-forged

THUMB SCREWS

P-K* Thumb Screws come with or without shoulders. Made by the cold-forging method, they have the strength for most rugged service—plus neat appearance that recommends them for the finest tools and instruments. Parker-Kalon Corporation, 200 Varick Street, New York 14, N. Y.

*TRADE MARKS REG. U.S. PAT. OFF.

P-K PARKER-KALON* FASTENING DEVICES

Makers of the Original Self-Tapping Screws

Sold everywhere through Accredited Distributors

BREVITY—Identify by IEN - 7600 if you write the maker

FULL SPEED AHEAD

IS THE PRESENT-DAY DEMAND

and You Can Command It With

D.P.S. MOTORIZED

Selective Feeding

HOPPER UNITS

Hopper feeding 30 caliber shell discs, concave side up, to press for drawing operations.

Modern production methods demand more speed and accuracy in the selection and feeding of parts than can be accomplished by hand... Our 25 years experience as pioneers in the assembly field enables us to ably meet this demand with the D.P.S. Motorized Hopper Units, the outstanding selective feeding devices with which production parts of a wide variety are selected, oriented and fed in a given position for primary and secondary operations... They are a completely self-contained unit, including drive and feed track. They are easily adaptable to presses, centerless grinders, thread rolling and slotting machines, also special machines... Six sizes, 8", 10", 12", 16", 24" and 30" diameters for handling various sizes of parts. No matter what your feeding problem is, we can meet your requirements. Designers of special equipment will also be interested.

Sixteen-inch hopper mounted for tapping machine equipped with air-operated dial—completely automatic operation.

Send for further details, also information about D.P.S. Power Screwdrivers, Nut Drivers and Special Assembling Machines.

Counting and feeding hopper with adjustable escapement to accommodate varying quantities.

1926 Our 25th ANNIVERSARY 1951

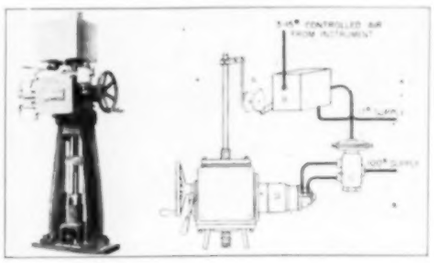
DETROIT POWER SCREWDRIVER CO.

2815 W. FORT ST. DETROIT 16, MICH.

BREVITY—Identify by IEN - 7602 if you write the maker

VALVE OPERATOR . . Pneumatic drive operates valve from a pneumatic control

Source: CONOFLOW CORP. 2102 Arch St., Philadelphia 3, Pa.



New assembly of the Rotomotor valve operator, previously described IEN-9-50, applies on the large slide valves used to handle spent and regenerated catalyst and in back-pressure control of flue gases in catalytic cracking processes. It is usually supplied with the valve it is to operate ready for connection to a 100-lb. shop air line and to a second air line with pressure reduced to 17 lbs. for use in the pilot.

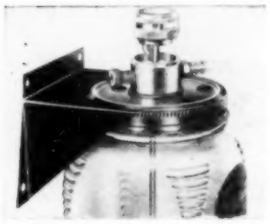
This unit is actuated by 3 to 15-lb. air from a pneumatic control instrument that can be suitably located. It directs the 17-lb. air to the operating diaphragm in a pneumatic valve leading to the motor on the main valve. This motor drives a train of gearing to rotate a nut on a non-rotating rising stem on the valve.

The assembly includes a clutch and handwheel that can be engaged for manual operation. Vertical movement of the stem operates a cam at the pilot valve to complete the assembly. The equipment will operate without tendency to "hunt" and will position the valve in small increments at any point in its overall travel.

BREVITY—Identify by IEN - 7603 if you write the maker

LUBRICATING . . Vacuum feed oiler connects to engine intake manifold

Source: UNIVERSAL LUBRICATING SYSTEMS INC. 785 Allegheny Ave., Oakmont, Pa.

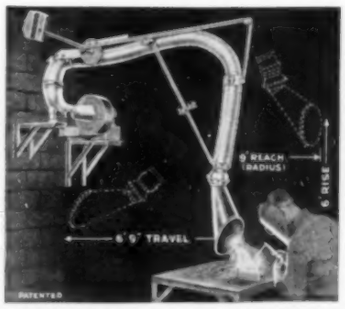


Model B No. 3000 is recently improved design of the company's Top-Oiler lubricator for internal-combustion engines, previously described IEN-4701-50. As in the original design lubricant is fed in adjustable amount to coat the upper walls of the cylinders, the pistons, the upper rings and the valves. The oil feeds from a glass container by the action of vacuum in the engine.

A new steel bracket supports the oil container. A new container lid provides access to the interior for filling and for cleaning as required. A new intake manifold fitting is included as a part of the standard equipment. A loop in the tubing acts as a reservoir for oil to permit immediate surge of the oil to the engine when it is being started.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7604 if you write the maker



RUEMELIN Fume Collector

Removes Welding Fumes at the Source...

Why continue to let your employees inhale welding fumes? You can solve the problem quickly and efficiently by installing a Ruemelin Fume Collector. It produces a powerful suction that draws out noxious gases, smoke and heat at the source. Guards employee health, resulting in less welder fatigue, therefore, greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding area vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing).

Free engineering service for your fume collector installation. Write for New Bulletin 37-D.

RUEMELIN MFG. CO.

3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.

MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

BREVITY—Identify by IEN - 7605 if you write the maker

How to save Labor and Money by Centralizing Lubrication

FOR more than 20 years, Farval has been saving manpower and money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Bulletin 25 gives you the facts and figures to apply to your own lubrication problems. The Farval Corporation, 3258 East 80th St., Cleveland 4, Ohio.

Write for FREE Bulletin 25

FARVAL

CENTRALIZED SYSTEMS OF LUBRICATION

BREVITY—Identify by IEN - 7606 if you write the maker

Calling all users of Speed Reducers!

Get the new Cleveland Book FREE

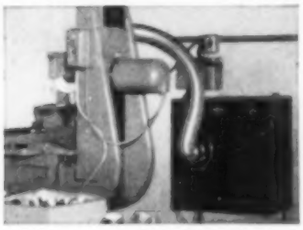
Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

CLEVELAND Worm Gear *Speed Reducers*

BREVITY—Identify by IEN - 7607 if you write the maker

STOP DUSTS



Instantly *with*

DUSTKOP

Available from stock of 22 standard models

300 cfm to 10,000 cfm

For: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

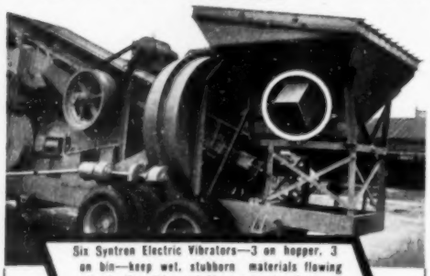
Ask for Catalog 605-2. Describe dust problem for recommendation by return mail — no obligation.

AGET-DETROIT CO.

401 Main Street Ann Arbor, Michigan

BREVITY—Identify by IEN - 7608 if you write the maker

Vibrators Made It Flow



Six Syntron Electric Vibrators—3 on hopper, 3 on bin—keep wet, stubborn materials flowing freely thru this portable aggregate plant. "Made it possible to produce aggregate in pits previously considered unworkable."

SYNTRON

"Pulsating Magnet"

ELECTRIC VIBRATORS

With Variable Control of Power

3600 controllable vibrations per minute keep even the most stubborn materials flowing freely thru bins, hoppers, chutes and screens . . . of any size . . . WITHOUT THE HAMMERING AND RODDING AND POKING THAT WASTES MANPOWER AND DAMAGES EQUIPMENT.

Write To—

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 7609 if you write the maker

Reduce Power Distribution Costs (Save copper too!) with Wagner Dry-Type Transformers

You can save money, save copper, and improve voltage regulation by bringing the *right* voltage to the load center with Wagner Dry-Type Transformers. They are safe to use—without fireproof vaults or other special protection—even where fire hazards are present. They provide steady voltage with minimum line losses. They are compact and light in weight—economical to install and easy to move when changes in plant facilities are necessary.

Wagner Dry-Type Transformers are available in single-phase, two coil units (Type AE) in sizes 1.0 to 200 kva and in three-phase, two coil units (Type AP) in sizes 3.0 to 300 kva. Both types 600 volts and below.

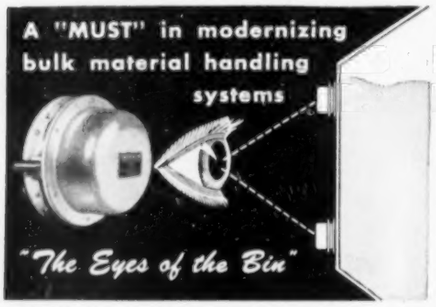
These dry-type transformers can be used in many lighting and power applications. Bulletin TU-90 gives many suggestions that you can use—write for your copy.

Wagner Electric Corporation 1891 1951

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 7610 if you write the maker



BIN-DICATOR BIN-LEVEL INDICATOR

BIN-DICATOR "keeps an eye" on levels of bulk materials in silos, hoppers, bins, chutes and automatically reports to central control point. Prevents over-filling; prevents overfeed and underfeed to conveyors and filling equipment; prevents delays and waste. Low cost, easy to install, simplest operation. Widely used.

BIN-FLO Aerator Units keep dry, finely ground materials moving in bins, hoppers, chutes; prevent packing and bridging.

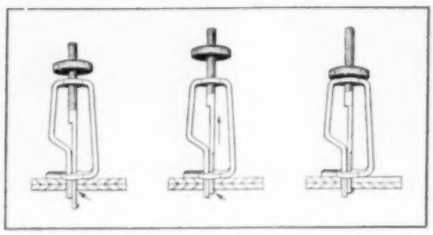
NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 7611 if you write the maker

CLAMP . . Applies in hole to secure metal sheets for riveting

Source: AVIATION DEVELOPMENTS INC.
208-12 N. Front St., Burbank, Calif.

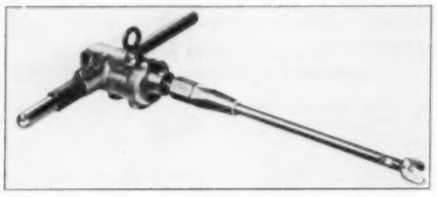


Avdel Gripper is a new clamp to hold sheet-metal parts together prior to riveting. It requires access to only one face of the work for application or removal. The hook end of the clamp is entered through a drilled or punched hole in two or more sheets until the hook passes the inner face. Inward movement is continued until the mating plain finger also is in the hole. This finger off-sets the hook-equipped one so the hook is in engaging position and cannot come loose when the knurled nut is turned down for the tightening action. The clamp is removed by reversing these operations. Sizes range from $\frac{3}{16}$ to $\frac{5}{16}$ in. in hole diameter.

BREVITY—Identify by IEN - 7612 if you write the maker

CLEANING . . Portable pneumatic tool drives carbide bits in straight tubes

Source: THOMAS C. WILSON INC.
21-13 44th Ave., Dept. TP-301, Long Island City 1, N. Y.



Type TP-301 is a new air-operated portable tube-cleaning tool that operates at speeds to 3,500 rpm. on 90-lb. pressure and can be employed at pressures as low as 50 pounds. The tool mounts hollow shafts available in one piece to 20 ft. in length or in sectional threaded lengths for maximum capacity to tubes measuring 40 feet. Minimum practical working head room is 5 feet.

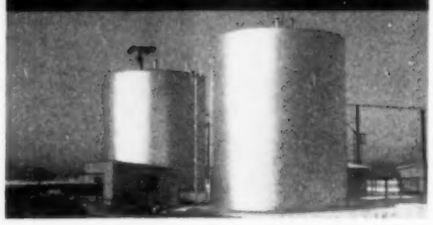
Deposits completely closing a tube can be removed quickly. Material cut out is washed away by a flow of air or water which connects into the tool back of the driving-air connection and feeds through the hollow shaft to ports in the cutter head. Weight is 15 pounds. Overall length is 13 inches. Capacity is for tubes from $\frac{3}{8}$ to $2\frac{1}{2}$ in. in outside diameter and to 3 in. under special conditions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products in this issue are indexed on page 102

BREVITY—Identify by IEN - 7613 if you write the maker

Profitable Storage In Extreme Temperatures



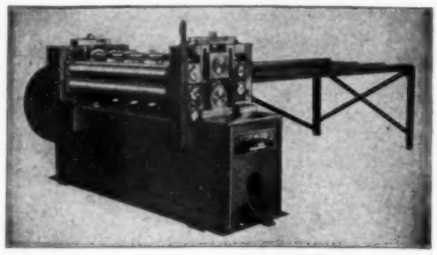
From Alaska to Saudi Arabia, Horton storage tanks have proven superior because they are carefully fabricated and erected for longer life. This can mean new profits in your operation regardless of your location. Quotations on Horton tanks may be obtained from our nearest office.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 7614 if you write the maker

RAFTER GANG SLITTER

For Lasting Accuracy

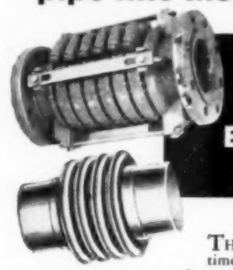


With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

BREVITY—Identify by IEN - 7615 if you write the maker

MAINTENANCE - FREE pipe line motion control



with CMH EXPANSION JOINTS

CMH Expansion Joints are made in various types for pressures up to 5500 psi., temperatures to 1600° F. Sizes, ⅝" to 48" I.D. Available in copper, stainless steel or other alloys. Flanged or welding ends.

THERE'S no need to spend time and money on periodical maintenance of expansion joints. CMH corrugated expansion joints require *no* maintenance, give long trouble-free service. Suitable for control of axial, lateral or radial motion in piping.

Write for descriptive literature which gives all the facts.

CHICAGO METAL HOSE CORPORATION
1333 S. Third Ave., Maywood, Illinois
Manufacturers of Flexible Metal Hose, Metallic Bellows and Bellows Assemblies and Expansion Joints for Piping

CMH ONE DEPENDABLE SOURCE for every flexible metal hose requirement

BREVITY—Identify by IEN - 7616 if you write the maker

All eyes—even our Plion's—are on PROTO *professional* tools. Experts know that they speed work, add to safety and serve many long years. Buy from the extensive PROTO line at your dealer's. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271G Santa Fe Ave.,
Los Angeles 54, Calif.

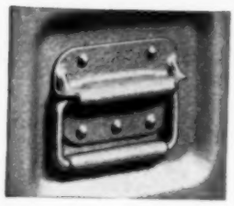
TOOLAGRAM

Revolutionary PROTO ball-type power universal sockets, 7475-7479, cling to the work better, operate more smoothly, are stronger and save more than conventional types.

PROTO TOOLS LOS ANGELES

BREVITY—Identify by IEN - 7617 if you write the maker

We've Built a BETTER HANDLE!



FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!

- non-rattling
- rugged construction
- rust-proof
- meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other Government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of
1328 Taylor Avenue
Baltimore 4, Maryland

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

BREVITY—Identify by IEN - 7618 if you write the maker

Chromalox Electric Heaters give fast, uniform and dependable heat for heating gases, liquids, viscous fluids; platens, dies, molds, ovens, soft metals and countless other heating uses. They install easily and quickly, provide concentrated and controlled heat that is safe, dependable, clean and economical. Put time and money saving Chromalox Electric Heat to work in your plant now.

Write for "100 WAYS TO APPLY ELECTRIC HEAT"

It's filled with application ideas on versatile, low-cost Chromalox Heaters. Send for your copy now.

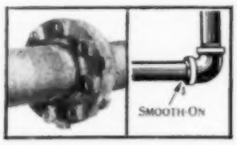
IB-17

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Immersion Heaters Advertisement, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 7619 if you write the maker

How to PREVENT LEAKS at Flanged or Threaded Joints



Comes ready to use in 1-, 5-, and 20-lb. sizes. If your supply house hasn't Smooth-On No. 3, write us.

You can effectively and lastingly seal flanged and threaded joints, rivets and seams by applying Smooth-On No. 3. This soft metal cement flows into and fills all voids when making up a joint, besides serving to lubricate threads. It expands and contracts like the surrounding metal with changes in temperature so that it keeps the joint tight. It is impervious to steam, water, oil, gas, air and many chemicals, and withstands high pressures as well as high temperatures. And it makes a tight joint that is ready for immediate service, and may be taken apart when desired.

FREE *Repair Handbook*

40 Pages of practical repairs to plant equipment, piping and structures, illustrated with 170 diagrams. Write for your free copy today.

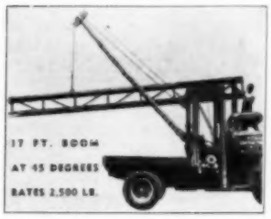
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

***Do it with* SMOOTH-ON**

BREVITY—Identify by IEN - 7620 if you write the maker

CRANE . . Power hydraulic boom operates with user's winch on a truck

Source: PITMAN MFG. CO.
302 W. 79th Terrace, Kansas City 5, Mo.



Telescoping boom, with provision to set at 12, 17 and 22 ft. lengths, mounts in a structural frame to swivel through a 180-deg. horizontal arc and through 100 deg. vertically. Both of these movements are powered by hydraulic cylinders receiving pressure from a hydraulic pump driven by a power take-off on the truck on which the unit is mounted. The structural frame includes outriggers that slide in pockets and lock for ground support on the two sides of the truck body. A winch, supplied or specified by the user, mounts on the truck body within the A-frame and handles the load line.

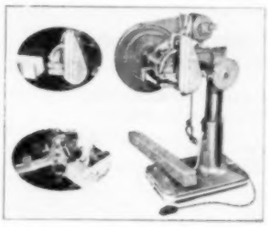
Hydra-Lift is the trade name for this unit which the company originally built to meet its own contract-work requirements. The assembly now is available for application on a user's truck where it occupies a space measuring 37 in. back of the cab. Overall height above the truck chassis is 96 inches. Overall width is 95 in. and weight is 2,700 pounds.

Lift capacity with the boom retracted to 12 ft. in length for a 6-ft. radius from its hinging point is 6,400 pounds. At 17 ft. length and 12-ft. radius, or approximately 45 deg. of inclination, the load rating is 2,500 pounds. The 22-ft. boom lying horizontally will lift 1,000 pounds, all with the outriggers extended. Control for the crane movements centers at the operator's position in the cab.

BREVITY—Identify by IEN - 7621 if you write the maker

STAPLING . . Motor driven machine staples the ends of long filled cartons

Source: DIAGRAPH-BRADLEY INDUSTRIES, INC.
P. O. Box 247-A, Herrin, Ill.



Filled cartons measuring 8 in. or less in square cross section and to any length are positioned flat on a table of suitable height. The end flaps are then stapled with this new inverted-head assembly of the company's Young horizontal stapling machine. The machine can be built to match any desired table height. The overlapping flaps of the carton are folded over a narrow clincher arm which extends to the front. The carton is slid under the machine head for stapling.

The machine is available for any of the standard sizes of stitching wire, usually .103 by .020 in. or .103 by .017 inch. It can be made the same as any of the other units in the company's line to produce a staple with a 7/16 or ½-in. crown and leg length from 7/32 to 17/32 inch. Variable-speed control with a ¼-hp. 110-volt ac. 60-cycle motor permits operation at 150 to 350 staples per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7622 if you write the maker

Q: Name a good screen cloth
A: HEWITT-ROBINS Screen Cloth

BECAUSE you increase the time between screen cloth changes—on *any make* of screen!

BECAUSE Hewitt-Robins Screen Cloth is made of Super-Gyraloy, the specially blended alloy steel wire that's the toughest, hardest screening surface ever developed.

BECAUSE Hewitt-Robins Super-Gyraloy Screen Cloth comes in the *weave* you want . . . the *size opening* you need.

BECAUSE its heat treatment and microstructure make Super-Gyraloy highly resistant to abrasion without sacrificing ductility. You can actually bend a wire of this cloth around its own diameter without fracture.

SEND TODAY for Bulletin No. 113-A. Fully describes Hewitt-Robins Super-Gyraloy Screen Cloth, 3/16" to 6" openings, made from #12 gauge wire to 5/8" rod in square and rectangular openings, flat top and non-blind weaves. Also in Gyraloy (spring steel) stainless steel, Monel metal, brass or enamel coated in any standard diameter of wire. Robins Conveyors Division, 270 Passaic Ave., Passaic, N. J.

HEWITT-ROBINS SCREEN CLOTH

BREVITY—Identify by IEN - 7623 if you write the maker

Our Model FA—used more than any other wrapping machine.

If your product needs a new package or a wrap...

We have the most complete line of wrapping machines in the world—machines that wrap the leading tobacco products, confectionery items, foodstuffs, drugs, etc. We also have cost-cutting machines for bundling packages and making cartons. Over 80 different models!

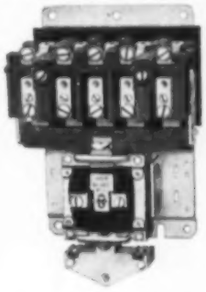
These machines provide large savings through reduced labor needs, high operating speeds and more efficient use of packaging materials. Most models are easily adjusted for a wide range of sizes and can be adapted for practically any material. Contact your nearest "PACKAGE" representative for detailed information.

Write for leaflet "Packages that Sell"

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · TORONTO · MEXICO, D.F.

BREVITY—Identify by IEN - 7624 if you write the maker

NEW! Size 0 A-C Solenoid Contactor with Multi-Pole Construction



Now Ward Leonard extends its line of improved solenoid contactors into the 15 ampere range—for fast, positive, consistent operation on load and control circuits.

Size O a-c solenoid contactors come with as many as 5 poles. Double break silver contacts may be interchanged to form normally open or normally closed contacts as desired.

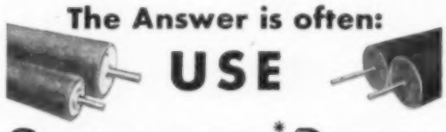
Operating coils are interchangeable with Size 1 contactor coils. Available with d-c "power plants."

Write for Bulletin 4458. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N.Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Reliable Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 7625 if you write the maker

The Answer is often: USE SHAF-TITE* ROLLS



Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS

Send For NEW ROLL CATALOG No. 48

INDUSTRIAL ROLL DIVISION

RODNEY HUNT MACHINE CO.
873 Main Street · Orange, Mass., U.S.A.
*Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 7626 if you write the maker

2 free books

with the complete money-saving story on Wolmanized Lumber

Tells facts about millions of feet of Wolmanized Lumber in service in industries for years.

How to avoid costly damage caused by rot and termites

Use Wolmanized* pressure-treated Lumber wherever timbers are exposed to conditions causing decay or termites. Preservatives that kill rot and termites are driven deeply into Wolmanized Lumber under high pressure (150 p.s.i.). This lasting protection—at low cost—helps Wolmanized Lumber last 3 to 5 times as long as untreated lumber!

Tells how Wolmanized Lumber is treated and where it can save you money.

Write for your free copies today!

American Lumber & Treating Co.
332 South Michigan Avenue
Chicago 4, Illinois

Wolmanized
PRESSURE TREATED
Lumber
Stops Rot and Termites

BREVITY—Identify by IEN - 7627 if you write the maker

CUT COSTS . . . FASTEN "ON THE DOUBLE" with the Chicago "214" DOUBLE RIVET SETTER

The "214" automatically feeds, inserts and clinches two rivets at a time . . . with speed that may mean a big saving in your fastening costs.

14" throat makes large assemblies easy to handle. For tubular rivets as large as 5/64", or less in length. Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

BREVITY—Identify by IEN - 7628 if you write the maker

Reduce Machine Noise and Vibration 60%-85%!

ANCHOR MACHINES ON **UNISORB®**

Yes, and UNISORB machine-mounting requires no bolts . . . no lag screws . . . no destructive floor-drilling. It's the modern way to anchor machines . . . saves installation costs . . . lasts for years and years with no maintenance . . . easy to replace . . . prevents vibration damage to floors, buildings and machinery.

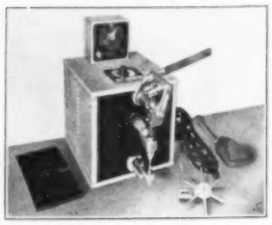
Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-1 SOUTH STREET
BOSTON 11, MASS.

BREVITY—Identify by IEN - 7629 if you write the maker

SOLDERING . . Resistance machine for instruments, jewelry, small parts

Source: JOYAL PRODUCTS INC.
56B Belmont Ave., Newark 3, N. J.



The electrodes in this new Model-1000 or 2000-WV machine are mounted vertically as compared to the horizontal arrangement for the similar machine, previously described IEN-5738-48. Power is supplied by a transformer in the 10 by 11 by 10 in. housing.

Model 1000 connects to a 110-volt single-cycle ac. power source. Model 2000 connects to a 220-volt line, also ac. The upper electrode is spring backed to control pressure when the operating lever is moved to "hold" position. A timer is supplied to set the heating interval. There are eleven steps of heat control which are set by turning a knob on the top.

BREVITY—Identify by IEN - 7630 if you write the maker

CORROSION PROOFING . . Tank lining made of welded polyethylene sheet

Source: AMERICAN AGILE CORP.
5804-8 Hough Ave., Cleveland 3, Ohio

All seams are torch welded

The company announces assembly of facilities in further development of its contract fabricating service, previously described IEN-2-50, with which it is prepared to supply completely welded polyethylene plastic tank liners for specified application. Assemblies are available in any shape or size with wall thickness to 1 inch. Assembly can be completed at the company's plant in Cleveland or at the final installation. Drain openings, pipe flanges, fittings and valves, also made of the plastic, are available for a complete assembly.

BREVITY—Identify by IEN - 7631 if you write the maker

TESTING . . Electronic instrument for radar, radio, television servicing

Source: HICKOK ELECTRICAL INSTRUMENT CO.
10544-48 Dupont Ave., Cleveland 8, Ohio

Model 650 Videometer is a new electronic instrument with crystal control to provide RF output calibrated directly in microvolts. Assembly is in a steel housing that measures 16 by 7 by 13 inches.

Included is a line-voltage scale, horizontal and vertical saw-tooth voltage sources and sufficient amplitude adjustment so the horizontal saw-tooth voltage can be used to light a picture tube. The instrument serves also as a means to simultaneously transfer a program to any number of receivers on a desired channel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7632 if you write the maker

NEW Bulletin 646 Manual Transformer-Type Reduced Voltage Starter

with time delay switchover

Bulletin 646 Reduced Voltage Starter

Here is the first outstanding improvement in manual transformer-type starters in twenty-five years. Bulletin 646 motor starters have an adjustable time delay which prevents careless operators from switching the motor too quickly to full running voltage. It is available in four sizes from 5 hp, 220-440-550 v, to 250 hp, 440-550 v, for 25, 50, and 60 cycles. Write for descriptive bulletin. Allen-Bradley Company, 1312 South Second Street, Milwaukee 4, Wis.

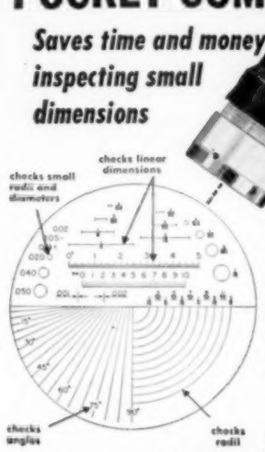
ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 7633 if you write the maker

new POCKET COMPARATOR

(pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of **BELL & HOWELL CO.** *distributed by*

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.
11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 7634 if you write the maker

MORE SOLD THAN ANY OTHERS

Write for Catalog **OF USES AND SPECIFICATIONS**

GENERAL Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY

Protect equipment and floors • Reduce Breakage

- ★ Wide Base Wheel
- ★ More Air Volume
- ★ More Stability
- ★ More Load Capacity
- ★ Longer Miles in Hi-Speed Service

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

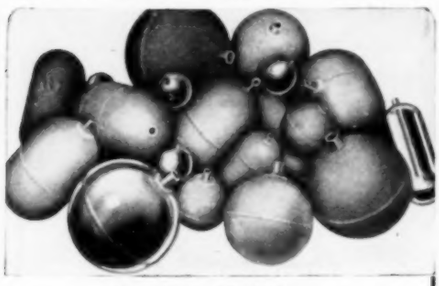
Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 7636 if you write the maker



Send for Nicholson

FLOAT BULLETIN 650

Complete Data on Welded Floats: Diagrams, Tables, Formulae for Calculation of Buoyancies

The booklet is a standard reference for specifiers of welded floats. Nicholson furnishes any type: for external or internal pressures; in stainless steel, Monel, chromium, cadmium or copper-plated steel. Sizes, 2" to 14" diam., press. to 4800 lbs.; standard or special connections. Quick delivery on many sizes and shapes. Nicholson floats are standard with hundreds of manufacturers.

W. H. NICHOLSON & CO. 159 OREGON STREET WILKES-BARRE • PA.

BREVITY—Identify by IEN - 7637 if you write the maker

SPREADS THE STRAIN!

The RAMSEY "Diagonal" Flexible Coupling

Note how the steel pinions are cut diagonally to stagger the shear point of the chain pins and utilize the full width of the chain. This patented RAMSEY design gives greater strength to the assembly, assures longer life under greater loads! Easily installed, aligned, and disconnected. Available in ten sizes, from ½" bore, in capacities to 600 hp. Write today for literature giving dimensions, capacities, list prices.

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 7638 if you write the maker

HIGH EFFICIENCY

RIGHT ANGLE DRIVES

PHILADELPHIA SPIRAL-BEVEL-HELICAL SPEED REDUCERS

Dependable . . . for transmitting power at right angles, either horizontally or vertically. Single, double and triple reductions with standard ratios from 1.5 to 1 up to 238 to 1. Single reduction type employs only spiral bevel gears. Helical gears used on second and third reductions of double and triple types. Single reduction unit for example is 98% efficient—so often smaller frame size motors can be used than with other comparable types.

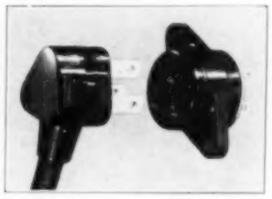
Bulletin 200 gives complete details...write on your business letterhead

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.
In Canada: William and J. G. Greey Limited, Toronto

BREVITY—Identify by IEN - 7639 if you write the maker

CONNECTOR . . Three wire plug and receptacle rates 15 amp., 110 volts

Source: SORENG MFG. CORP.
9553-57 Eden Ave., Schiller Park, Ill.



Silver plated brass prongs in the plug engage silver-plated silicon-bronze contacts which are dimpled for registration with the prongs in the receptacle of this new three-wire connector. The receptacle is designed for single-hole panel mounting by two screws or rivets. Both sides are provided with solder terminals and are rated at 15 amp. at 110-volt or 10 amp. at 220-volt ac. or dc.

Typical applications include use in fractional horsepower reversing circuits, light-duty 3-phase circuits and for appliance grounding. Bodies are made of impact-resistant Durez phenolic plastic. The inner surface of the cord outlet has a recess to take a cord strain-relief ring. The plug will take a three-wire stranded 18-gage rubber-covered cord.

BREVITY—Identify by IEN - 7640 if you write the maker

SEALING . . Pavement joint filler, asphalt saturated felted cane fibre

Source: CELOTEX CORP.
122 S. LaSalle St., Chicago 3, Ill.

Applies in new pavement

Flexcell trade names a new expansion-joint filler for application between sections of concrete pavement to seal the joint. The material is supplied as a resilient board saturated with asphalt compound. Thickness is ¼ to 1 inch. The saturation process waterproofs the cane fibre but does not plug the tiny air cells contained in this fibre which give the board its compressibility. It is characterized by its ability to resist extruding.

BREVITY—Identify by IEN - 7641 if you write the maker

TESTING . . Electric meter reads to 1,000 watts and 100 volts

Source: TRIPLETT ELECTRICAL INSTRUMENT CO.
11-15 Harmon Drive, Bluffton, Ohio

Load-Chek Model 600 is a new unit in the company's line of electric test meters for application on electronic equipment. It plugs into a 110-volt 60-cycle ac. line and provides an outlet into which the power cord leading to the electronic equipment can be plugged. On one side it reads from 0 to 500 watts and from 0 to 1,000 watts. It reads 0 to 130 volts ac. or dc. on the other. Assembly is in a black plastic housing measuring 6 by 2½ by 5½ inches. Weight is 2 pounds. List price of the new meter is $29.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7642 if you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS *Centrifugal* SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

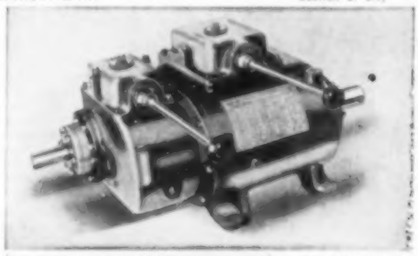
MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 7643 if you write the maker

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

In geometric progression of 1.29 (total reduction of 6:1)



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios—1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys and motors from stock.

up to 50 h. p. For: Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. 1144 SECRETARY, DETROIT, MICHIGAN

BREVITY—Identify by IEN - 7644 if you write the maker

MOBILIZE YOUR PLANT for maximum production now!

YALE 4,000 LB. CAPACITY ELECTRIC TRUCK

Get the most from every machine ...every hour...every dollar with YALE INDUSTRIAL TRUCKS

These Yale fork lift trucks will help gear your plant for *all-out* efficiency...stack materials nearly 16' high...put wasted aisle and overhead space to work...eliminate costly, slow, back-breaking hand lifting.

They stay on the job, too...keep production lines well fed and shipments rolling. For example, the Yale electric truck with magnetic contactor controls cuts "down time" to a minimum. The Yale gas truck with fluid drive increases clutch life and reduces maintenance costs. And these are only two of many Yale exclusives!

Let Yale help you mobilize your plant for *greater production at lower unit cost now!* Send coupon today.

YALE & TOWNE

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

In Canada write The Yale & Towne Mfg. Co., St. Catharines, Ontario

THE YALE & TOWNE MFG. CO., Department 368
Roosevelt Boulevard & Haldeman Ave., Philadelphia 15, Pa.

☐ *Please have your local representative call on me.*
☐ *Send me, free, "How Book of Cost Cutting Material Handling"*

Name_____
Company_____
Street_____
City_____ State_____

Yale is the registered trademark of the Yale & Towne Manufacturing Co.

BREVITY—Identify by IEN - 7646 if you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 7647 if you write the maker

SOLVED: an unusual FEEDING PROBLEM— with GAST rotary AIR PUMPS

This machine by Basco Manufacturing Company, Inc., puts Econ-O-Seal aluminum caps on milk bottles in dairies.

PROBLEM: Place cap on milk bottle at the right instant — when, and only when, bottle is ready.

SOLUTION: Suction from Gast Rotary Air Pump picks up cap. Pressure sends it along, also returns sucker for next cap.

RESULT: Dependable operation, moderate cost for pump, long-term satisfaction.

And that's but one example. We can show you scores of other problems — solved with equal success — by putting Gast Rotaries to work. Or better still, submit your problem to Gast for analysis.

Our engineers offer concentrated experience on the uses of low pressure, low vacuum, and compressed air for rotary power. And Gast Units offer unique advantages to manufacturers who "Specify Gast." Write for details — "Air may be your Answer!"

SWEET'S CATALOG FILE

Gast Application Ideas Booklet — showing 26 design problems solved — sent upon request.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS - COMPRESSORS - VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 139 Hinkley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 7648 if you write the maker

NEW "UTILITY SIZE" HOT PLATE

TEMCO

MODEL 1900 . . . for boiling, evaporations and general laboratory work . . .

Ideal unit for a wide variety of routine and critical laboratory uses because of its wide temperature range, exceptionally close control — less than 5° F. variation. Features completely variable control over full temperature range from 100° to 700° F. Compact, convenient . . . plugs into any 110 V. 50/60 Cy. circuit. Plate size, 6" square. Cast aluminum top heats rapidly to all edges. Neon pilot light. Well insulated and ventilated. Price, $19.75. Write for literature and nearest dealer's name.

THERMO ELECTRIC MANUFACTURING CO.
482 Hull St., Dubuque, Iowa.

BREVITY—Identify by IEN - 7649 if you write the maker

GENERATOR . . Diesel driven unit replaces battery on electric truck

Source: READY-POWER CO.
3830 Grand River Ave., Detroit 8, Mich.

A diesel engine characterizes this new assembly in the company's line of electric truck power units to replace the storage battery on the truck. The engine is standard construction by International Harvester Co. and is direct connected to a Ready-Power dc. 8-pole compound-wound generator. Output rating is normal at 25 and 35 kilowatts in two available models, both of which operate at 1,400 rpm. Output is at 60, 72 and 120 volts as required.

The engine starts on gasoline. It can be turned over by hand although standard equipment includes two 6-volt storage batteries connected in series, an automotive-type battery-charging generator with belt connection to the main equipment and a 12-volt starting motor with a Bendix pinion connection and solenoid starter switch.

Control centers at a throttle for foot or hand operation to provide "run," "idle" and "off" positions. A separate lever selects gasoline start and diesel run. Interlocking prevents error. The engine is water cooled and is provided with the usual accessory equipment. Its muffler exhausts to a venturi tail pipe discharging into the fan so the radiator air stream dilutes and dissipates exhaust gases. The two assemblies weigh 4,300 and 5,300 lb. respectively. Lengths are 64 and 73 inches. Width is 32 and 37 inches. Height is about 50½ and 58½ inches. The smaller unit is suited for application on trucks rating 10 to 25 ton. The larger unit powers trucks rating 25 ton or more.

BREVITY—Identify by IEN - 7650 if you write the maker

DRIVE . . Variable speed motor and control for stepless 50 to 5,000 rpm.

Source: INDUSTRIAL CONTROL CO.
Arlington Ave. & Straight Path, Wyandanch, N. Y.

Torque rating is 10 in. oz. in this new Type 301-A assembly of special motor and its associated control. Operation is on 110-volt 60-cycle ac. The control can be adjusted for any motor speed between 50 and 5,000 rpm. Feed back of the armature voltage through a thyratron is employed to control motor power and hold speed constant under varying loads to its capacity.

The motor is designed for flange or base mounting and is suited for use in the laboratory, as a component in machines for coil winding, conveying, spinning and in machine tools to control feed rates as well as cutting and grinding speeds. The control housing measures 7½ by 7½ by 6 inches. Its weight is about 4 pounds. A meter assembled on the housing face is calibrated n revolutions per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7651 if you write the maker

PROVIDES TOUGH, DURABLE SURFACE THAT NEEDS LESS ATTENTION

Multi-Clean Floor Preserver eliminates porosity in wood floors, penetrates the fibers and cells of the subsurface. It forms a thin, tough film that holds water, dirt, and foreign matter at the surface for easy removal. It also is an excellent base for wax and reduces slipperiness. Floors treated with Multi-Clean Floor Preserver stay light, attractive, and sanitary — and they require far less attention.

Method **FOR EVERY FLOOR**

The Multi-Clean Method recognizes that each type of floor requires its own special care. For each there is a carefully planned, thoroughly tested and proved procedure, combining the use of Multi-Clean Liquid Floor Chemicals and Floor Machines to achieve easier maintenance, more attractive appearance, and longer life.

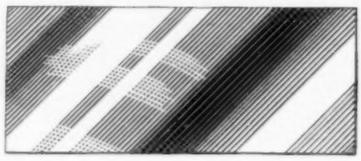
FREE—MULTI-CLEAN FLOOR MAINTENANCE MANUAL

Write today for the free maintenance manual written for your specific type of floor. State what kind of floor you are interested in—address Multi-Clean Products, Inc., Dept. IE-8, St. Paul 1, Minn.

MULTI-CLEAN PRODUCTS, INC.
Custom Cleaning Chemicals
Floor and Rug Machines • Permanent Floor Finishes • Industrial Vacuums

BREVITY—Identify by IEN - 7652 if you write the maker

LENS . . Mirror-like surface deflects direct light rays



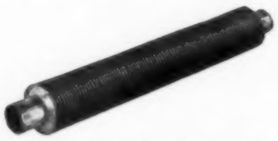
Known as CESCO "Re-Flecto-Ray" lens, this thin, flexible material, used with a welding helmet lens, reflects from the welder's eyes most of the glare from direct light. When placed between regular filter and cover lens, the Re-Flecto-Ray lens permits welder to see work in sharp detail. Lessens eyestrain and fatigue, increases production and quality of work. Costs only 15c each (slightly higher in Canada).

Full information may be obtained from

CHICAGO EYE SHIELD CO.
2326 Warren Blvd.
Chicago 12, Illinois

BREVITY—Identify by IEN - 7653 if you write the maker

"Ro-Fin" Tubes



For efficient heat transfer

Nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING are in production . . . straight lengths . . . coils . . . U-bends . . . with or without threaded end connection, or for standard flare connections! Nearly all nationally known manufacturers specify "Ro-Fin"!

For Refrigeration Condensers • Steam Condensers
Fluid Recovery Condensers • Fan-Type Unit Heaters
Concealed Radiation Convectors • Diesel Engine Cooling

Write for Information on All Heat Transfer Problems!

ROME
TURNEY RADIATOR COMPANY

200 East Front Street Rome, New York

BREVITY—Identify by IEN - 7654 if you write the maker

MORE SPEED MORE SUPPORT

ANNOUNCING

NEW "PADDOCK GUIDES" FOR BAND-SAWS

Notice carefully details of PADDOCK'S new Ball-Bearing Band-Saw Guides. With this new MODEL 20, blade can be held at an angle —permitting a 36 inch machine to cut material 22 inches thick at an angle up to 45° to any length. The guides are easily adjusted to width, thickness, and blade angle—the ball-bearing wheels reduce blade breakage and hold the working portion of the blade so that more and better work can be turned out. Write for price and details on this NEW GUIDE today.

PADDOCK TOOL COMPANY

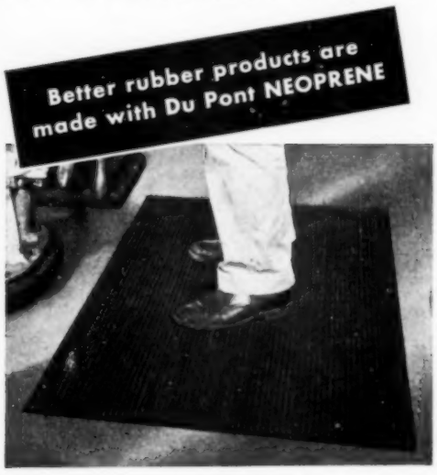
Guide Makers Since 1920

1418 Walnut St., Kansas City 6, Mo.

Paddock BALL-BEARING BAND SAW GUIDES

BREVITY—Identify by IEN - 7655 if you write the maker

BREVITY—Identify by IEN - 7656 if you write the maker



Resilient neoprene standing mat is easy on the feet...withstands oils, grease, abrasion

To provide maximum foot comfort for standing workers, this ribbed mat was made of neoprene. The resilient ribs are strong enough to support a man's weight, but flexible enough to act as effective shoe scrapers. Neoprene was specified because of its ability to withstand rough treatment in the plant. Here it must stand up under constant exposure to machine oil, cutting and chipping from sharp metal scraps, or scuffing by heavy work shoes. What's more, neoprene will not propagate flame, and is unequaled in its aging characteristics.

Resilient products made of dependable Du Pont neoprene are used in many fields. Wherever severe conditions, such as exposure to sunlight, heat, moisture and weathering, must be met, neoprene has proved its outstanding superiority. Leading rubber goods manufacturers, familiar with neoprene's outstanding properties, use it for their finest products. While Du Pont makes no finished goods of neoprene, your rubber goods manufacturer or distributor will gladly tell you about neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

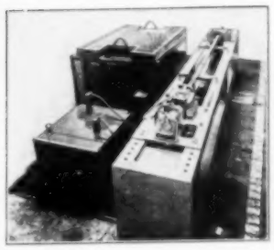
Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-8, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 7658 if you write the maker

HEATING . . Electric resistance unit for application on 3/8 to 2½ in. bars

Source: FRANK C. CHESTON CO.
30 Church St., Room 323-E, New York 7, N. Y.



New size has been added to the company's line of electric resistant heaters with capacity to take 77-in. torsion bars measuring 1 to 2½ in. in diameter for light, medium and heavy Army tanks. The heater will bring these bars up to 1,600 deg. F. in intervals ranging from 1½ to 4 min., keeping the bar free from scale due to the short heating interval. Length capacity is 4½ to 30 feet. Overall temperature range is 200 to 2,200 deg. F. Operation is on 60-cycle ac. input.

BREVITY—Identify by IEN - 7659 if you write the maker

STERILIZING . . Ultraviolet lamp to kill odors in surrounding air

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Lists about $7 to $19 with fixture

New design of the miniature screw-base Type WL-794 Sterilamp, previously described IEN-12502-46, is now available for use in appliances such as dryers, washing and vending machines and also in rooms where it mounts in a special wall fixture. The lamp destroys odors resulting from cooking, smoking, perspiration, dampness, mildew by producing ultra-violet radiation of a wave form that transforms oxygen in the installation area into ozone.

Odorout is the trade name. Rating is 3½ watts. Dimensions are 2½ in. in length by 1⅝ in. in diameter. Operation is in a special socket fixture through a transformer from a 110-volt 60-cycle ac. line. The lamp lists at $1.30 and has a service life of six months when operated 24 hours a day. Fixture prices range from about $7 to $19 including a lamp.

BREVITY—Identify by IEN - 7660 if you write the maker

WOOD WORKING . . Circular saw blade chisel-shaped teeth, 6 to 9 in. sizes

Source: SKILSAW INC.
5039 Elston Ave., Chicago 30, Ill.

Chisel-Tooth trade names new circular saw blade available in four diameters from 5⅞ to 8¼ inches. The center hole is designed to fit the company's line of portable electric saws including Models 67, 77, 800, 825 and 87. The blade produces chips rather than fine sawdust. The blade cuts freely and at high speed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7661 if you write the maker

Work Comfort in Temperature Extremes from −85° to +314°F.

This Stanzoil Hot 'n Cold Glove is designed expressly for use in industry where liquid-tight hand protection in extremely high and extremely low temperatures is required. Several insulating layers of fleecy material are coated with bright red DuPont milled neoprene that resists damage from oils, acids and caustics.

Tests on this glove show that work is possible in liquids at temperatures of 85° below zero and 314° above zero, Fahrenheit scale. Laboratory workers hands were comfortable after a half hour's immersion in a liquid whose temperature was 12°F.

For more information, complete catalog and prices write us. Refer to Stanzoil No. R-28. *The Pioneer Rubber Company, 635 Tiffin Road, Willard, Ohio, Los Angeles 4, California.*

STANZOIL — OVER 30 Years OF QUALITY GLOVE MAKING — PIONEER

BREVITY—Identify by IEN - 7662 if you write the maker

SQUARE D CONTROL for SMALL SPOT WELDERS

● Consistent performance and ease of servicing make the Type BBG-1 combination or individual Type TBS-6 timer and suitable contactor the most efficient control for foot or motor-operated spot welders, 30 KVA and smaller.

Write for Small Spot Welder Control Bulletins, Square D Company, 4041 N. Richards St., Milwaukee 12.

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 7663 if you write the maker

Keep workers alert and increase efficiency by providing adequate fresh air in your plant. DeBothezat Vertical Discharge Roof Ventilators are available with fan wheels 36", 42" and 48" in diameter, providing up to 40,900 cubic feet of air per minute. Address Dept. I. E.-851, for bulletin and prices, or phone your local DeBothezat agent.

DEBOTHEZAT
FANS DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

BREVITY—Identify by IEN - 7664 if you write the maker

SUPER-VOLTAGE TESTING OF OKOLITE-OKOPRENE

assures lasting circuit security

Tiny and hidden imperfections in electrical cables can be most treacherous, since they may not show up at ordinarily specified test voltages. Only by the use of super-voltages, both a-c and d-c, are such concealed defects disclosed.

Okonite super-voltage testing is the severest in the industry. A-c voltages far higher than standard specifications, plus d-c tests three times as high as ordinary a-c tests, are routine on Okolite-Okoprene cables.

Only a cable made with premium materials and the exclusive Okonite strip process can reliably pass such tests. To be sure of lasting circuit security in *your* plant, specify Okolite-Okoprene. Ask for Bulletin IE-1053. The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY
OKONITE *insulated wires and cables*

BREVITY—Identify by IEN - 7665 if you write the maker

Eliminate Shaft Leakage with SYNTRON

SHAFT SEALS

SEAL IN GASES AND LIQUIDS

Self-contained, self-lubricating, easy-to-install units that provide fully automatic sealing action . . on pumps, compressors, engines, turbines, mixers, propeller shafts, etc.

Standard seals eliminate leakage of air, water, gases, petroleum products, etc., and withstand temperatures from 10°F. to 200°F. and pressures to 25G psi. Special seals for corrosive and abrasive liquids.

Write for Descriptive Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 7666 if you write the maker

MARSCHKE SWING FRAMES ARE DIFFERENT!

Size for size, Marschke Swing Frame Grinders are heavier than any other machine on the market. This extra weight is no accident—it's there—in the right places—to eliminate *vibration*, the "wheel eater." Marschke swing frames give you better two-way balance . . . smoother spindle rotation: bearing seats are *precision ground and honed* to assure perfect spindle alignment and bearing fit. These are only a few reasons why Marschke grinders are the best money can buy.

An inquiry will bring you interesting data.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVE. • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 7667 if you write the maker

GET YOUR COPY
of free booklet on unique, multi-purpose thermostat

Be among the many to benefit from unique performance of low-cost Fenwal THERMOSWITCH thermostats. Read all about them in free booklet available at no obligation to you. Learn how the Fenwal single-metal shell expands or contracts *instantaneously* with temperature changes, making or breaking totally enclosed electrical contacts. Used to control heat, pressure and other variables. Fast, accurate, sensitive.

Fenwal THERMOSWITCH®
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE...*but only to heat*

MAIL TODAY

FENWAL, INC., 78 Pleasant St., Ashland, Mass.
111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers

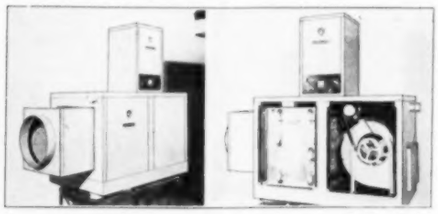
Please send me the Fenwal booklet "Everything you want in a thermostat."

Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 7668 if you write the maker

VAPOR COLLECTOR . . Removes oil from the air surrounding a machine

Source: TRION INC.
1951 Trion Bldg., McKees Rocks, Pa.



Screw machines, grinding machines, and other high-speed equipment employing straight oil coolants, not water emulsions, are served by this new electrostatic Oil Mist Precipitator. The unit consists of three elements to include the housing-enclosed ionizing-collecting cell, a motor-driven blower, also housing enclosed, and a power pack assembled in a separate cabinet. The power pack is shown on top of the unit in the illustration. It can be located separately. A plenum chamber for end intake measuring to 15 in. in diameter or a similar chamber with two 7-in. side intakes completes the assembly of the new collector.

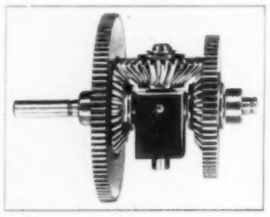
Two capacities rate 1,330 and 2,000 cfm. Each can be supplied with the blower section for floor or overhead installation and with suitable connections to a hood above the machines to be served. The blower section can be eliminated and the ionizing-collecting section supplied alone for existing installations of blower-equipped ducts to exhaust the mist-laden air at the machines. Operation is on 110-volt 60-cycle ac. Height is about 32 inches. Width, front to back, is about 27 in. for the smallest unit and 39 in. for the largest one. Length, including the cell assembly and the blower housing together, is about 4 ft. for both assemblies.

The company is prepared to supply a special cell with isolated insulators for applications at machines where the cutting oil has been diluted with water to form an emulsion.

BREVITY—Identify by IEN - 7669 if you write the maker

DRIVE . . Miniature differential for use in instrument transmissions

Source: FORD INSTRUMENT CO.
31-12 Thompson Ave., Long Island City 1, N. Y.



Low friction combined with accuracy in manufacture characterize this new differential with its single spider-gear construction. It employs curved-tooth bevel gears with zero-degree spiral angle for smooth operation with minimized backlash in either direction. Lost motion in the shaft is guaranteed not to exceed five min. of arc in the ¼ and $\frac{3}{16}$-in. models, seven min. in the $\frac{3}{16}$-in. assembly. Frictional losses are a little under 0.01 oz. in. of torque. Overall length of the three sizes is 2½, 2¾ and 3 inches. Greatest diameter is 0.635, 1.03 and 1.20 in. in these three sizes.

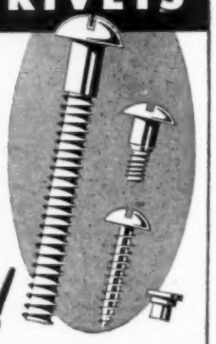
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 7670 if you write the maker

Beaver·Bilt
SCREWS
STUDS • RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1300 WEST ADAMS STREET, CHICAGO 7, ILL

BREVITY—Identify by IEN - 7671 if you write the maker

Nutting FLOOR TRUCKS WHEELS-CASTERS

"I'll Keep Things Moving For You!—The Boys all like my easy rolling style"
says the Nutting Trucker

A Great Variety of Standard Types

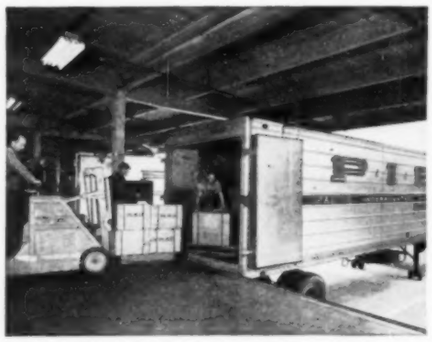
Save lost time, eliminate bottlenecks and wasted motions—increase production capacity by stream-lining handling of material with the type of Nutting Trucks suited to your work. For quicker delivery a great variety of standard types are available—bar handle, stake, platform, 2-wheel, box, rack, shelf and many others. Also rubber tired wheels and casters of all sizes for any truck.

Look in your classified phone directory for your local Nutting representative. If not listed write us stating kind of trucks you need.

Write for Bulletin 49G

our 60th Year
NUTTING TRUCK AND CASTER COMPANY
2012 DIVISION STREET, FARIBAULT, MINNESOTA

BREVITY—Identify by IEN - 7672 if you write the maker



"Steel strapping acts as insurance

for the shipper, carrier and consignee."

— says Mr. Charles P. Palin
Freight Operations Manager
PACIFIC INTERMOUNTAIN EXPRESS

"In a cross-country operation like ours, with pick up service on one end and delivery on the other, we find steel strapping essential for the proper protection of many types of shipments."

From first-hand experience, Mr. Palin and countless others responsible for the safe transit of goods, recognize steel strapping as the trade mark of good packaging. Steel strapping permits the use of lighter, less expensive containers — at a big saving of space and weight. And with containers strapped into conveniently handled units, loading-unloading is faster, easier.

On defense production and in essential industries, steel strapping is at work saving time, labor and equipment. After the present emergency you can make these savings on your shipments. The Stanley Works, Steel Strapping Division, New Britain, Connecticut. Offices in principal cities.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY
Reg. U. S. Pat. Off.

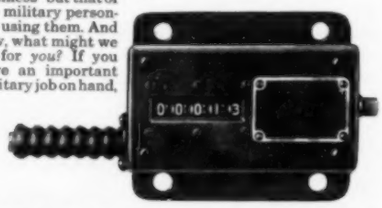
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 7674 if you write the maker

A lot of "Military Intelligence" comes from counters like these... because every branch of the service... in fact...

Everyone Can Count on VEEDER-ROOT

Shown here are an aircraft and an artillery counter. What they do, and how they do it, is "nobody's business" but that of the military personnel using them. And now, what might we do for *you?* If you have an important military job on hand, you can count on us to help you just as quickly as our present military commissions will permit.

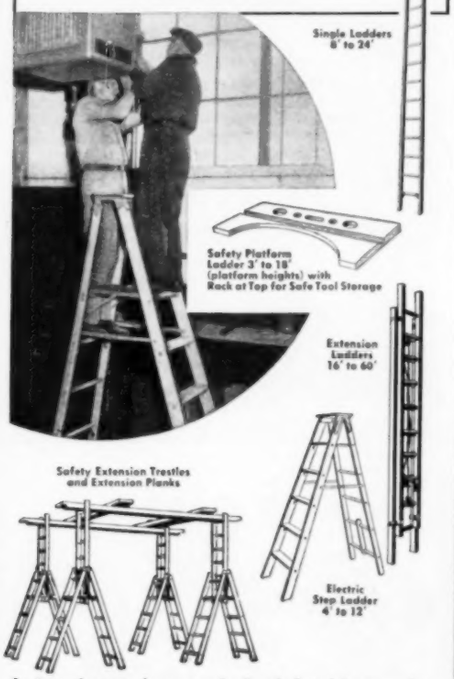


VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONN. • GREENVILLE, S. C.
Montreal, Canada • Dundee, Scotland

BREVITY—Identify by IEN - 7675 if you write the maker

Cost Less Per Year... because They Last YEARS Longer

GOLD MEDAL LADDERS AND TRESTLES



In factories, warehouses and other industrial properties, service and maintenance men demand Gold Medal Ladders and Trestles because they are stronger, safer and withstand hard usage for years longer. Made of the finest, selected woods, they're skillfully made in a large, modern factory by one of the oldest organizations in the field—with more than seventy years' experience.

Types and Sizes for Every Need

You can put your men at the most convenient working height *in greater safety* with Gold Medal Ladders — single, extension and step types — some of which are illustrated — *in a wide range of sizes.*

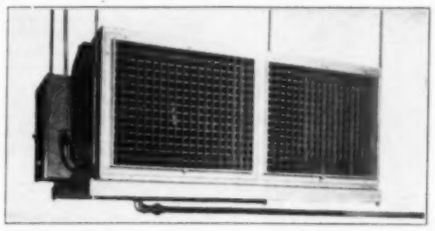
Used in thousands of plants. See how they can help you . . . write for new Catalog L-71.

GOLD MEDAL LADDERS SCAFFOLDING
Ladders, Scaffolds for any Purpose—Any Place—Any Time
for Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc.
38-21 12th St., Dept. IEN, Long Island City 1, New York
See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 7677 if you write the maker

HUMIDIFYING . . Motor driven unit moistens and delivers air to a room

Source: BAHNSON CO.
51 S. Marshall St., Dept. N, Winston-Salem, N. C.



Type BA-2 is a new humidifying unit designed for suspension from overhead to deliver moistened air through adjustable directional grills. The assembly includes two of the company's centrifugal evaporators and air-handling fans, each driven by a ¾-hp. motor for operation on 60-cycle 3-phase ac. on specified standard voltage. Overall dimensions are 62 by 72 by 28 inches. Weight is a little under 700 pounds.

The fans draw air in from the space being served and pass it over the centrifugal evaporators where the air picks up the atomized water. The moistened air moves forward to a bank of filter eliminators where droplets of entrained moisture are removed. It passes through to issue at the front.

Non-corrosive materials are employed in parts subject to water damage. Other parts, including the housing and grills, are protected by a corrosion-resistant finish. The motors require lubrication once a year. The grills are removable for access to the filter eliminators for periodic back washing and a hose is provided on each unit for this purpose. Evaporative rating for each unit can be set between 0 and 12 gph.

Control centers at the company's Type-BA automatic equipment in which a control element is located in an aspirated cabinet that can be installed at a selected point. This element operates an enclosed electric switch to actuate a solenoid valve in the service panel on the humidifying unit.

Accessory equipment, including pre-filters for atmospheres that are particularly dirty, heaters operated by steam, electricity or gas, external air intakes, are to specification.

BREVITY—Identify by IEN - 7678 if you write the maker

CONVEYING . . Gravity roll section designed to handle artillery shells

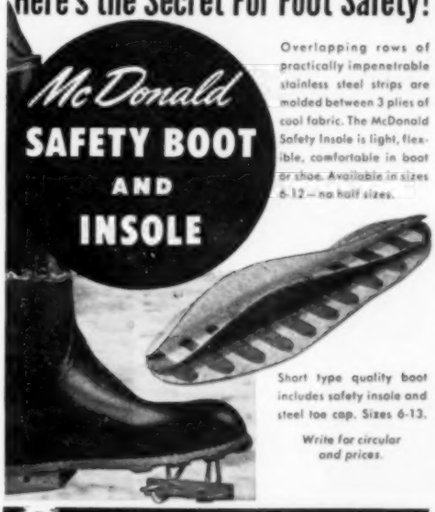
Source: SAMUEL OLSON MFG. CO.
2420-22 Bloomingdale Ave., Chicago 47, Ill.

Steel rollers formed from 10-gage welded tube are equipped with ball bearings and mounted on stationary $\frac{7}{16}$ in. hexagon shafts between structural side members in this new conveyor section. Roll length is 5⅛ inches. The curve contour nests a shell at the center of the assembly. The rollers can be rubber covered to specification. The sections are available to handle 75 to 155-mm. shells.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7679 if you write the maker

Here's the Secret For Foot Safety!



Overlapping rows of practically impenetrable stainless steel strips are molded between 3 plies of cool fabric. The McDonald Safety Insole is light, flexible, comfortable in boot or shoe. Available in sizes 6-12—no half sizes.

Short type quality boot includes safety insole and steel toe cap. Sizes 6-13.

Write for circular and prices.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 7680 if you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

BREVITY—Identify by IEN - 7681 if you write the maker

"THE COILS IN OUR MAGNETIC REVERSING SWITCHES BURNED OUT EVERY TIME THE SILO GATES JAMMED, BUT THAT WAS BEFORE WE PROTECTED THEM WITH FUSETRON FUSES"

"Sure! you can quote me," continues Mr. E. C. Willy, Chief Electrician, H. J. Kaiser Co., Radum Plant, Pleasanton, Calif.

"In the past, we found magnetic reversing switches welded the main contacts when Silo Gates jammed. When reverse control operated, the armature could not properly engage, resulting in a burned out coil.

"The coils cost about $4.00 each, but most important was the substantial production loss each time the coil burned out.

"We now have 0.4 amp. Fusetron dual-element fuses installed to protect these coils. During the year 1950 we blew about 100 Fusetron fuses, but didn't lose any coils. This represents a saving of at least $400.00 in coils and kept me from being dragged out of bed at night, an occurence that often happened before. Then, too, we can replace burned out Fusetron fuses much faster than we can replace coils, to say nothing of the valuable production time we save."

Why Risk Losses in Your Plant, When You too, Can Get 10 Point Protection by Using

Fusetron Fuses

One burned out solenoid . . .
One destroyed switch or panel . . .
One needless shut down . . .
One lost motor . . .
May cost you more than replacing every ordinary fuse with a FUSETRON dual-element fuse.

FUSETRON — TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION — BUSS

BUSSMANN MFG. CO.
Division of McGraw Electric Co.
University at Jefferson
St. Louis 7, Mo.

Fusetron Fuses have high interrupting capacity as shown by tests of Electrical Testing Laboratories of New York City in December 1947.

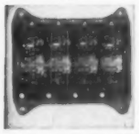
BREVITY—Identify by IEN - 7683 if you write the maker

means wasted fuel

The designing engineer, the mechanic and the pilot, all find Cambridge Exhaust Gas Analysers essential for developing, adjusting and operating internal combustion engines. These instruments make available continuous indication of air-fuel ratio of the mixture being supplied to the engine.

exhaust gas tester

determines the completeness of combustion in one or all cylinders. This rugged and accurate instrument is conveniently portable for field and shop use.



aero mixture indicator

is a flight instrument for installation in single or multi-engine planes. Its use makes possible greater pay load, cruising radius and safety.

Send for literature

CAMBRIDGE INSTRUMENT CO., Inc.

3710 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.

Pioneer Manufacturers of Precision Instruments

BREVITY—Identify by IEN - 7684 if you write the maker

INCREASE VOLUME, MECHANIZE YOUR PRODUCTION

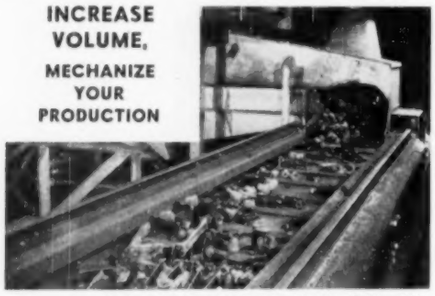


Illustration shows J-T Electric Vibrating Feeder (with absolute control over tonnage handled) feeding parts to Jeffrey Steel Apron Conveyor.

YOU can put your problem of mechanization for profit squarely in our hands. We have had years of experience . . . have installed some of the largest handling jobs in the world . . . have complete line of modern and improved machinery from which to choose. Jeffrey will work with you . . . and for you.

JEFFREY

ESTABLISHED 1877

THE JEFFREY MANUFACTURING CO.

914 N. Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 7685 if you write the maker

Since 1887

MILWAUKEE WROT WASHERS

Better **WASHERS ...Competitively Priced**

Large volume production, the most advanced methods and facilities, plus more than 60 years of continuous experience in the manufacture of Washers, are factors that enable us to offer you top quality washers and stampings at competitive costs. Over 22,000 sets of dies for making Washers of every type (Standard and Special), from every type of material, for every purpose, in any finish. STAMPINGS of all descriptions; Blanking, Forming, Drawing.

Submit your blueprints and quantity requirements for estimates.

WROUGHT WASHER MANUFACTURING CO.

The World's Largest Producer of Washers

2207 S. BAY ST., MILWAUKEE 7, WIS.

BREVITY—Identify by IEN - 7686 if you write the maker

EXTINGUISHING . . Sprinkler head delivers water fog, wide angle pattern

Source: ROCKWOOD SPRINKLER CO.
36-40 Harlow St., Worcester 5, Mass.

T-Head is a new sprinkler head available in either sealed or open assembly for installation in a fixed pipe line to deliver downward. Water issuing from the unit is broken into a fog pattern fine enough to fill an area from a ceiling down to the floor and heavy enough to drive the particles down to a fire on the floor. The fog prevents gas and flame from rising or from mushrooming and needlessly opening adjacent heads. The unit is recommended for automatic and for open-deluge installation.

BREVITY—Identify by IEN - 7687 if you write the maker

LAYOUT . . Sectioned planning board particularly to study material handling

Source: TRIOMETRIC INC.
709-13 Penn Ave., Pittsburgh 22, Pa.

Plastic surfaced planning board

New application of the company's sectioned planning board, previously described IEN-10745-50 for plant layout, is designed to set up material-handling flow diagrams in order to study equipment installation in relation to material handling. The board is laid out with ¼-in. ruled squares to take the approximate 900 scale templates representing personnel and equipment. Colored strips indicate boundries of buildings, storage areas, roadways and holding areas.

Equipment includes a Methods-Engineering ruler, a plastic marking pencil and rubber cement. Two instruction booklets describe the recommended method to prepare flow diagrams and provide step-by-step directions to analyze and improve material handling methods.

Three sizes represent 80 by 112 ft. to 192 by 228 ft. of floor area. List price is $10 to $27.50.

BREVITY—Identify by IEN - 7688 if you write the maker

MOTOR . . Synchronous design rates 16 inch ounce at 1 rpm.

Source: BRISTOL MOTOR CO.
302-A Bristol Bldg., Old Saybrook, Conn.

Model 425 is a new series of synchronous timing motors for operation on 110-volt 60-cycle ac. The motor measures 2 in. in diameter by 1¼ in. in height. It is available for output as required between 1 revolution per hour and 1,800 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7689 if you write the maker

APCO *Packaged* CONDENSATION RETURN UNITS

for the SMALL LOW PRESSURE JOBS

10 to 40 lbs. with 8, 15, 30 Gallon Receivers

Packaged Duplex Condensation Return Unit with No. 4 Series Apco Pumps.

Start saving valuable heat units with APCO Square Tank Units. Built to meet demand for a smaller unit with the superb performance of our larger units. Remember, the Pumps are Apcos. No Vapor Binding — Special Provision for Expansion and Contraction — No Frictional Wear within pump. Thus, ECONOMY.

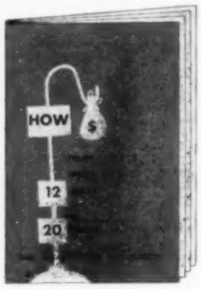
Write for Bulletin 113-ST

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS — **AURORA PUMP COMPANY**

52 Loucks Street, Aurora, Illinois

BREVITY—Identify by IEN - 7690 if you write the maker



HOW TOOL CRIB CONTROL WILL CUT YOUR TOOL COSTS TOO

New 12-page booklet tells how 20 plants stopped loss and theft of tools, reduced crib inventories, cut idle waiting time of men and machines, reduced breakage, stopped disputes—and more, too, with McCaskey Tool Crib Control. Their reports show savings and service improvements that can be made in your plant at a surprisingly small cost.

Write today for your copy of "How Tool Costs Were Cut 12 Ways in 20 Plants"—Booklet A-502 IEN.

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 7691 if you write the maker

Ledeen **VALVES**

14 Models for Positive, Easy Actuation of Air or Hydraulic Cylinders

HAND OPERATED 4-WAY VALVE

A simple, economical valve, suitable for most requirements. Requires only light turning effort. Built for long life.

FOOT OPERATED 4-WAY VALVE

Leaves hands free for other work. Requires only light pedal pressure. Works like accelerator throttle. Particularly valuable for women workers.

POWER OPERATED 4-WAY VALVE

For remote control with or without electricity. Can be controlled by microswitch, cam, finger or toe operation.

Ledeen Valves embody the rotating disc construction, and are designed for controlling the flow of air, oil or water. They are made in 14 different models for 5 different cycles, in 6 sizes.

Ledeen Mfg. Co.

1602 San Pedro St.
Los Angeles 15, Cal.

Write for Bulletin 510

BREVITY—Identify by IEN - 7692 if you write the maker

GREATER CARE

means **LONGER WEAR**

Protect Your

VIKING PUMPS

Father Time is kind to Viking Pumps because they're built sturdy and simple, having only two moving parts. However, you'll enjoy even longer and more dependable pumping service from your Vikings when you give them *extra* care.

For information and instructions on correct installation, operation and maintenance of your Viking Pumps, write today for your free copy of the Viking Service Manual F.

VIKING — AN HONORED NAME IN PUMPING

Viking PUMP COMPANY

Cedar Falls, Iowa

BREVITY—Identify by IEN - 7693 if you write the maker

There's a difference between COMPACTNESS and SPACE ADAPTABILITY...

The MULTICLONE has BOTH!

IN SELECTING dust recovery equipment, every foot of space saved is that much more valuable area available for other equipment. And the compactness of the equipment you select is just one of several ways to save plant space. Equally important is the *adaptability* of the equipment to space limitations within an existing plant.

And this is how the MULTICLONE *makes two-way savings in space:* The MULTICLONE itself is unusually compact, requiring as little as 1/6 the floor space, ¼ the cubic space of other units of comparable performance.

In addition, the shape of the MULTICLONE is readily adaptable to various space requirements and can be varied to fit odd-shaped or restricted areas that would otherwise be waste space.

For this reason you can fit the MULTICLONE into unbelievably small spaces, thus saving valuable plant area. But space-saving is just one of many MULTICLONE advantages. It is unusually efficient...has no high-speed moving parts to maintain, no screens to clean or replace...is simple to install, easy to service...and has many other important advantages.

Get the full story by sending for this MULTICLONE booklet

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 7694 if you write the maker

hose and duct clamps to fit special needs

Ordinary run of the mill hose clamps don't fill the bill for many applications with specialized or exacting requirements. Marman Clamps are engineered to fit particular needs.

For all around use... varying sizes and shapes... Marman Universal Clamps are the answer. Continuous band design for easy installation and wide size adjustment... stainless steel for strength and corrosion resistance... self locking swivel nut for resistance to vibration... can be used again and again.

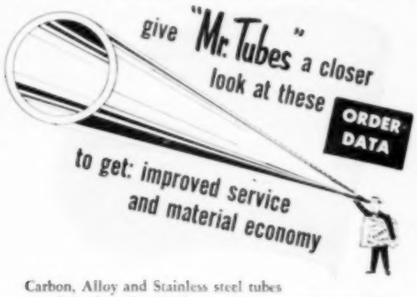
For extra strength... Marman T-Bolt Clamps' exclusive features provide even circumferential take up, assure an efficient seal.

For fast assembly and disassembly... Marman Quick Coupler Clamp patented snap on latch makes it go on or off in an instant. Particularly suitable for removable equipment, accessories and ducts.

Our catalog tells more... just write Dept. 1-8

MARMAN PRODUCTS CO. INC. 940 WEST FLORENCE AVENUE INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 7695 if you write the maker



Carbon, Alloy and Stainless steel tubes are defined under CMP regulations as "controlled materials." As such, they are critical materials. Not being a mind reader, "Mr. Tubes"—your B&W Tube Company representative—needs a *close* look at the following facts in order to supply the available tubing most economically suited to your requirements. **1** All related CMP authorizations and government contract numbers. **2** Any acceptable alternates in type, finish, composition, and size. **3** A brief, informative description of your intended fabricating methods. **4** A description of the end-use, exact as to product and its service.

TA-1640-G

THE BABCOCK & WILCOX TUBE COMPANY
Executive Offices: Beaver Falls, Pa. General Offices & Plants: Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

BREVITY—Identify by IEN - 7696 if you write the maker

CONVEYING.. Metal mesh belt unit to handle hot or cold metal products

Source: R. T. SHEEHAN CO.
P. O. Box 345-A, Plymouth, Mich.

Geared head motor rating ½ hp. is connected to the headshaft in this new portable incline conveyor to operate the metal-mesh belt over the tail pulley and under side guides at a specified speed between 20 and 72 rpm. The belt is equipped with cleats on 2-ft. centers. The conveyor has load capacity of 25 lb. to the running foot. Four widths measure 8 to 20 inches.

Height at the foot end is minimum at 8 in., maximum at 16, 20 or 24 in. by positioning adjusting supports at the sides. Delivery height, also subject to adjustment, is 34, 45 or 53 in. in lowest position and 50, 63 or 71 in. in maximum position. Three lengths, measured horizontally between the pulley centers, are 60, 88 and 111 inches. The metal belt can be coated with a rubber plastic on its top surface to specification. Mesh sizes are 1 by 1 in. and 1½ by 1 inch.

BREVITY—Identify by IEN - 7697 if you write the maker

PAINTING.. Plastic material for wood surfaces air dries in 4 hours

Source: MINNESOTA PLATON CORP.
51 Minnesota Ave., Pipestone, Minn.

List is about $13 per gallon

Platon trade names a new phenolic plastic finish for application by brush, dip or spray on floors, furniture, wood products. Coverage is about 1,000 sq. ft. per gallon. The film dries to a glossy non-slippery finish that will not crack, chip or peel and is not subject to attack by alcohol, acid, water. It also is fire retardent. It is available as a colorless liquid or in desired colors in gloss, semigloss or flat finish.

BREVITY—Identify by IEN - 7698 if you write the maker

CRANE.. Heavy duty boom for company's 5 ton shovel crane

Source: SCHIELD BANTAM CO.
252-56 Park St., Waverly, Iowa

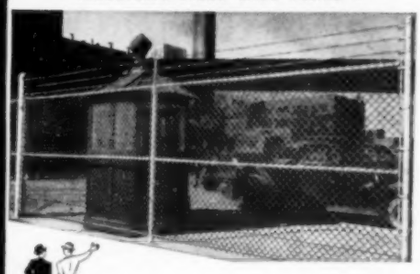
Length is 25 ft. with an available additional 5-ft. extension in a new boom which the company has developed for use on its 5-ton Bantam crane. The new unit has about four times the rigidity of the standard boom to provide load ratings of 5 ton at a 10-ft. radius with outriggers and a 1,000 lb. counterweight. In addition to use as a crane the equipment can be rigged as a shovel, trench hoe, back-fill dragline, pile driver, magnet.

All Makes of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7699 if you write the maker

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

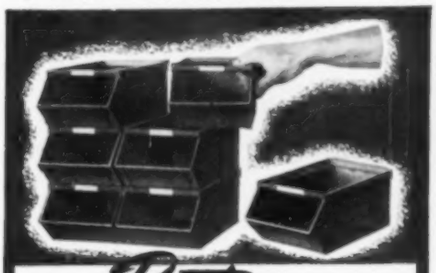


Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 7700 if you write the maker



Parts...

★ Where You Want Them . . .
★ When You Want Them

You'll save time, space and labor handling parts and material when you use these patented STACKBINS. STACKBINS keep parts instantly accessible—eliminate waste hand motions—stack compactly to form units of exactly the right shape and capacity—make order filling or assembly work faster, easier, more efficient. Heavy steel, all-welded construction. Sizes from 3½" x 6" x 3⅛" to 15" x 24" x 11". Prices from $.65 to $2.75.

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

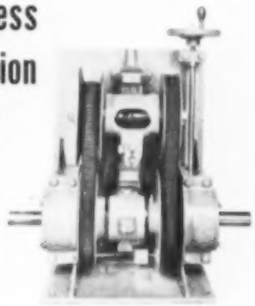
Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 7701 if you write the maker

Wider Stepless Speed Variation

with less belt replacement



Now you can get instantaneous stepless speed control in minimum space and with assurance of minimum belt replacement.

The new Worthington ALLSPEED DRIVE uses a *tandem belt* arrangement rather than a single belt. Result—a wider range of speed variation, less belt wear (narrower belts mean less flexing and compression).

Sizes from 1-15 hp; up to 16-1 variation. Upright or horizontal frame. With built-in motor—or to be driven by belt, chain or gears.

Write for Bulletins: AS-1600-B3 and B4. Worthington Pump and Machinery Corporation, Allspeed Drive Sales Division, Holyoke, Massachusetts.

WORTHINGTON

AS.1.5

BREVITY—Identify by IEN - 7702 if you write the maker

NOW... WARPLIS precision ground Flat Stock Immediately Available from FRASSE

Warplis precision ground flat stock, ready for use on all precision jobs, is now quickly and conveniently available from Frasse warehouse stock. This cold melt electric furnace tool steel is oil hardening, non-warping—precision ground on all four surfaces and free from defects and decarb.

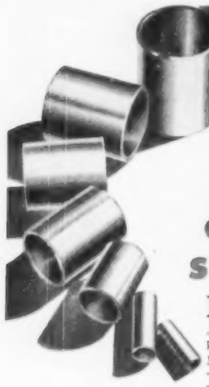
Frasse carries over 150 different sizes in stock for you to choose from. Flat sizes range from 3/64" to 1¼" in thickness, square sizes from ¼" to 1" . . . standard length is 18", other sizes and lengths can be furnished to order.

Each length of Warplis bears its size and grade and is furnished in its own individual protective wrapper bearing size and heat treatment. You'll find Warplis a pleasure to work with . . . and you'll realize a considerable saving on make-ready. Write for additional details and our Warplis inventory—no obligation.

FRASSE for WARPLIS PRECISION GROUND FLAT STOCK

Peter A. FRASSE & Co., Inc.
17 Grand Street, New York 13, N. Y.
JERSEY CITY PHILADELPHIA BUFFALO SYRACUSE

BREVITY—Identify by IEN - 7703 if you write the maker



JOHNSON GP BEARINGS

over 850 stock sizes

HERE'S a money saving tip. Time saving, too. Use Johnson GP (General Purpose) Bearings for 90% of your sleeve bearing needs—for product or for maintenance. Large production runs assure low unit cost—no pattern costs—no special machine setups. Available from distributors' and warehouse stocks from coast to coast. The Johnson Bronze Catalog lists all sizes available.

Write today for your copy

SLEEVE BEARING HEADQUARTERS Since 1901

Johnson Bronze

476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 7704 if you write the maker

Get floors really clean . . . faster!

Cleansers designed for hand-scrubbing cannot be expected to give the fast cleaning action required for machine-scrubbing. To get floors *film-free clean* in minimum time, choose a cleanser that's specially made for machine-scrubbing. *All Finnell Cleansers are.* And there's a type for every need, including *Setol,* the mineral oil solvent for cleaning oily wood floors. The *Finnell Machine* shown above is a *Self-Propelled Scrubber-Vac.* Cleans up to 8,750 sq. ft. per hour! (Powder dispenser is optional.) For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2608 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. *Pioneers and Specialists in* FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES — BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 7705 if you write the maker

FAIRFIELD GEARS for FINE GEARS *Help build* **TOP PERFORMANCE** into any product!

It's a better product when it's equipped with FAIRFIELD GEARS! Long producers of precision-made, automotive type gears for high grade trucks and tractors, Fairfield now brings the same standards for gear performance to a wide variety of products: Road Graders . . . Machine Tools . . . Power Shovels . . . Printing Presses . . . Grain Combines . . . Mine Hoists . . . Rail Cars . . . Drilling Rigs . . . Diesel Engines . . . and many others. For the BEST in GEARS, specify FAIRFIELD!

FAIRFIELD MANUFACTURING COMPANY
315 South Earl Avenue • Lafayette, Indiana

BREVITY—Identify by IEN - 7706 if you write the maker

BRASS . . Processed copper alloy in sheet, strip, wire, rod and tube

Source: AMERICAN BRASS CO.
696-700 S. Main St., Waterbury 20, Conn.

Formbrite trade names a new line of brass alloys in which fine grain structure is combined with a hard surface and with excellent ductility, machining and finishing qualities. The process involves rolling or drawing, plus a special heat treatment. It is applied at present to brass alloys containing 63 to 90 per cent copper. In a 70/30 analysis, tensile strength tests at 63,000 lb. per square inch. Yield point is 39,000 lb. per sq. in. with 0.5 per cent extension under load. Elongation in 2 in. is 35 per cent.

The fine grain structure provides surface finish that requires only a color buff prior to plating. Strength, springiness and ductility result in cold fabricated parts that frequently can be made of thinner metal than if regular deep-drawing brass were used. The wire and rod can be cold headed and upset. Seamless cold-drawn brass tubes are particularly suited for applications requiring an unusually good finish.

The material is available at the same price as that quoted for ordinary deep-drawing brass and in the same gages, sizes and forms. It is made in one temper to simplify stock problems and minimize inventory.

BREVITY—Identify by IEN - 7707 if you write the maker

GRINDING . . Cylindrical machine, nominal 10 and 14 in. swing capacity

Source: CINCINNATI GRINDING MACHINES
Marburg & Kline Sts., Cincinnati 9, Ohio

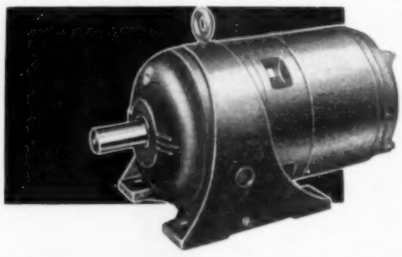
Improved construction in the company's 10-in. and 14-L plain hydraulic cylindrical grinding machine includes a new headstock equipped with a single 1-hp. ac. motor to eliminate previous need for dc. input to the machine. Power is now transmitted to the spindle through V-belts and 4-step sheaves. A magnetic brake is built in.

The bed measures 39½ in. from the floor line to the centers or 2 in. less than the previous design. Grinding-wheel collets are designed for wheels with 12-in. center holes for continued usefulness on smaller machines after the outside diameter of the original 30-in. wheel has been worn down below the size for efficient operation.

Detail illustrated information covering both sizes of machine in the various bed lengths in which they are available is contained in a new 12-page Publication G-603. The Filmatic main-spindle bearing is shown and described in detail.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7708 if you write the maker



FOOTE BROS.-LOUIS ALLIS

Gearmotors

PROMPT DELIVERY! You can count on prompt delivery of Foote Bros.-Louis Allis Gearmotors—the finest Gearmotor obtainable. Superior in design and construction. Available in single, double, and triple reductions to provide output speeds from 780 down to 7.5 r.p.m. Capacities from 1 horsepower through 150 h.p. Available with open, drip-proof, splash-proof, enclosed and explosion-proof motors.

Write for Bulletin G.M.A

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

BREVITY—Identify by IEN - 7709 if you write the maker

GARLOCK RUBBER EXPANSION JOINTS

Compensate for expansion, contraction and minor misalignment in PIPE LINE connections

Garlock Rubber Expansion Joints are constructed of an exclusive high-grade rubber compound which is combined with plies of sturdy cotton duck and reinforced with steel wire or rings. They resist cracking and corrosion—and do not take a permanent set, but return to their normal length even after repeated flexing. For all pipe sizes from 2" to 72", including tapered joints. Specify No. 204 for *Pressure;* 205 for *Vacuum,* 206 for *Pressure and Vacuum.*

Write today for descriptive folder.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

BREVITY—Identify by IEN - 7710 if you write the maker

B.F.Goodrich

helps you get better operating results —better tire service

HERE'S a man who gets results for you. He's your BFG representative who helps you get longer, more efficient industrial tire service. He's trained in tire maintenance—will give you a program on tire care that helps increase production — eliminate lost time.

Let TW ANALYSIS lengthen tire life

This local B. F. Goodrich man is a tire specialist. He's been given training so that he can analyze your operation . . . study loads, hauls, equipment, floors and hauling surfaces and then make specific tire and wheel recommendations to you. He'll also give you suggestions on tire care and maintenance that you'll find particularly helpful. His tire selection recommendations are impartial because BFG has the only *complete* line of industrial tires. His only interest is in assuring the best possible tire service for you.

A similar program is also available for manufacturers of industrial hauling equipment.

For full details of the TW Analysis plan, mail the coupon below. There's no obligation whatsoever.

The B. F. Goodrich Co.
Department TW-121
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

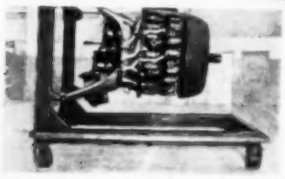
Name_____
Title_____
Company_____
City_____ State_____

BREVITY—Identify by IEN - 7712 if you write the maker

What's your materials-handling problem?

If casters are involved, you can get the answer from Bassick.

As the world's largest maker of casters and wheels, there are sizes and types in the Bassick line to fill your needs, special or standard. Address your problem to THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.



Bassick 10 in. "Floating-Hub" Double-Wheel Casters, with built-in shock absorbers, "cushion" the heavy load of this aircraft engine, protecting its intricate parts from damage in movement.

Bassick MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

BREVITY—Identify by IEN - 7713 if you write the maker

THE NEW OILGEAR "JK" FLUID POWER FEED PUMPS

ARE SO EASY TO APPLY

To New or Old Machines

Simply connect a new, small Oilgear "JK" Feed Pump to an Oilgear cylinder and an Oilgear engineered control and you have a complete pushbutton and switch-controlled fluid power system. No hydraulic or electric application engineering is required. Merely follow standard recommendations in mounting units, connect pump to cylinder with two pipes and wire two solenoids on pump to electric controls. Oilgear supplies the feed pump, cylinder, control cams, limit switch panel, control panel and pushbutton station. Oilgear provides patented, tried and proven hydraulic and electric circuits.

You can improve your new and old machines without further congesting your engineering department or employing hard to get qualified hydraulic engineers. You cut production and assembly costs because NO mechanical control linkages . . . NO auxiliary valves, pipes or fittings are required. You do not have to risk delay, disappointment or malfunctioning. You avoid divided responsibility. You receive the full values inherent only in 100% Oilgear systems.

No other single change in a machine can contribute so much to simplified design, reduced costs or improved performance as the installation of the "JK" feed system.

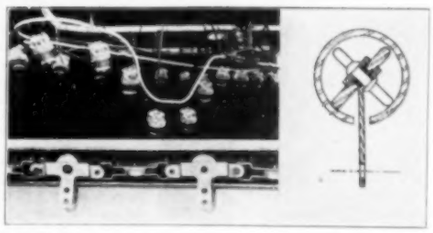
Bulletin 44200 describes this small, compact packaged unit that incorporates feed pump, rapid traverse gear pump, control and relief valves as an integral unit; other features described are: wide range of feeds . . . consistently maintained pre-set feed rates, ease of servicing without disconnecting pipes or draining oil reservoirs, etc. Send for this bulletin today. THE OILGEAR COMPANY, 1567 W. Pierce Street, Milwaukee 4, Wisconsin

Oilgear Fluid Power
PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS AND VALVES

BREVITY—Identify by IEN - 7715 if you write the maker

CONVEYING . . Tube enclosed chain with load supports at 6 in. intervals

Source: SOUTHERN ENGINEERING CO. 249-A N. First St., Burbank, Calif.



Steel tube forming the track of this new Chain-Veyor is supplied in combinations of straight sections, horizontal and vertical curves. They assemble into a closed loop to move through a plant area as required. The chain assembles inside the tube with load supports extending downward from alternate links. The links themselves are 3 in. in length and are joined by universal-type bronze swivel blocks and pins.

The wheels are turned from solid steel bar and are equipped with Oilite bronze bushings. A feature in the construction is the 90-deg. angle positioning of the wheels with each other and the 45-deg. angle with the load supports as shown in the illustration. The arrangement compensates for vertical and horizontal thrust to minimize drag. Load-carrying capacity is 30 lb. at each support.

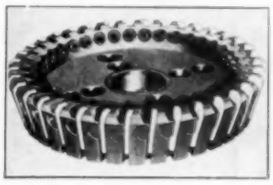
Drive unit equipped with ½-hp. motor and a 3 to 1 variable-pitch sheave transmission to a geared reducer provide for chain movement in reversible direction at speeds between 3 and 9 fpm. Overall length of the drive assembly on its mounting base is 40 in. and width is 12 inches. Height above the base measures 16 inches.

The track is supplied in standard 15-in. radius curves with track length at 2½ ft. for a curve covering 90 degrees. Track weight is 2 lb. per foot. The chain weighs 1 lb. per ft. including the load support. A take-up section is based upon a 180-deg. curve. It telescopes into two straight runs and is backed by springs. This unit provides 12 in. of take-up movement.

BREVITY—Identify by IEN - 7716 if you write the maker

MILLING . . Carbide blade cutter in seven diameters from 6 to 18 inches

Source: KENNAMETAL INC. 100 Lloyd Ave., Latrobe, Pa.



Style MF Kennamill is a new design of face-type milling cutter with solid Kennametal blades wedged in position. The wedges and operating screws are made of alloy steel, hardened and ground. They remain in the cutter body, will not come out. The blades are the same as those employed in previous designs of cutters by the company for use in cast iron. Two styles are available to cut to a square shoulder or to a 45-deg. corner. The cutter is suited for general-purpose work and for high speed continuous production milling operations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 7717 if you write the maker

Dutton Econo-THERM "PACKAGED" STEAM GENERATOR SHOWS BIG SAVINGS!

LEFT—Compact 160 h.p. Econo-THERM.
RIGHT—Bulky old 90 h.p. boiler required 3 men.

READ WHAT OFFICIALS SAY AT W. B. PLACE & COMPANY, HARTFORD, WIS., CUSTOM DEERSKIN TANNERS:

"We are very much pleased with the Dutton gas-fired boiler . . . it has done an excellent job of heating, and been practically trouble free." As to cost of operation, *"our bills to date indicate a substantial saving . . . a big saving in labor."*

From a cold start, the Dutton will produce 125 lbs. of steam pressure in just 15 minutes. The old unit took 2½ hours!

Exclusive "off-center firing" with rotary combustion gives you faster steaming with greater safety. These and many other features make EconoTHERM superb for heating, processing and power uses. Gas or oil fired.

Get all the details — WRITE NOW FOR ECONOTHERM BULLETIN EC-1001

Other types and sizes — 5 to 250 h.p.

Dutton BOILER DIVISION
HAPMAN-DUTTON COMPANY • KALAMAZOO, MICH.
Boiler Makers Since 1880

BREVITY—Identify by IEN - 7718 if you write the maker

EVERY ENGINEER will want a copy of this BULLETIN

SEND FOR BULLETIN 110

● It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8". . . any length stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Send for Bulletin 110. Hannifin also builds custom cylinders in any quantity to special designs. *Bring us your cylinder problems!*

HANNIFIN CORPORATION
1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 7719 if you write the maker

IDEAL Thermo-Grip® Does Soldering Jobs Better!

Thermo-Grip with "Plier" attachment speeds up soldering lugs to cables.

FASTER!

Resistance heating provides instant heat for fast production soldering.

EASIER!

One hand always free to handle solder. Concentrates heat. Does jobs no other tool can handle.

CHEAPER!

Time savings up to 30%—no waste — no cold flow joints—no re-makes.

NEW LOW-COST MODEL

"Standard" 1000-Watt Model with "Plier," "Pencil" and "Fork" attachments also available.

Sold Through America's Leading Distributors

TEST IT FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Avenue
Sycamore, Illinois

Please arrange FREE Thermo-Grip Demonstration and send catalog data.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

BREVITY—Identify by IEN - 7720 if you write the maker

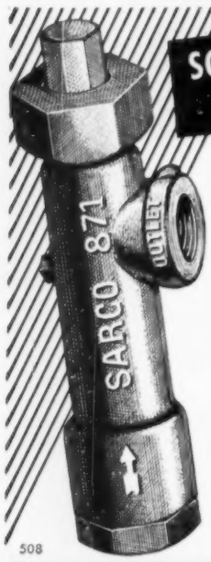
Vaportight Industrial Lighting Fixtures

Dependable lighting in the presence of moisture and non-flammable dusts, gases or vapors is assured by the substantial protection built into Pyle-National Vaportight Pylets. Heavy cast metal bases, weathertight sealing, and heavy guards, are features that provide for the most severe operating conditions of industrial service.

The Pylet line includes a complete range of types, including types for conduit and wall mounting, universal 4 and 5-hub types, two and three gang, handrail and outlet box fixtures for 10 watt to 200 watt lamps. Also Midget fixtures, plugs and receptacles, switches, junction boxes and other vaportight Pylets. Consult your Pylet Catalog 1100 for complete listings.

THE PYLE-NATIONAL COMPANY
1348 North Kostner Avenue • Chicago 51, Illinois

BREVITY—Identify by IEN - 7721 if you write the maker



SOMETHING HAS BEEN ADDED

At no extra cost you can have approximate temperature control as well as removal of condensate from steam coils or jackets, by using . . .

SARCO THERMOTONS

in place of ordinary steam traps. They are of the liquid expansion type and can be set to discharge condensate at any desired temperature below 212°F.

Some condensate is thus held back, moderating the heating effect of the coil to maintain the temperature required.

Ideal for cleaning or rinsing tanks. Not affected by corrosive fluids as the unit can be entirely outside the tank.

Write for Bulletin 552.

508

SARCO SAVES STEAM — SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y. SARCO CANADA, LTD., TORONTO 5, ONTARIO

BREVITY—Identify by IEN - 7722 if you write the maker

You'll Want This New Folder About Better...

FRACTIONAL H.P. GEARING

Get your free copy of this useful new 6-page folder, now! It brings you a picture-trip through the modern, daylight G.S. plant. 15 attractive illustrations present a few of the many *different types* of G.S. Fractional Horsepower Gearing. On the back page are two useful standard charts. If the economical, mass production of better Small Gearing, from 12 to 96 D.P., is an important consideration in your business, then *by all means* send for this free folder now. Learn all about G.S. facilities, developed to their present high degree of perfection through more than 30 years of specializing in making Fractional Horsepower Gearing *exclusively!*

Send for it Now!!

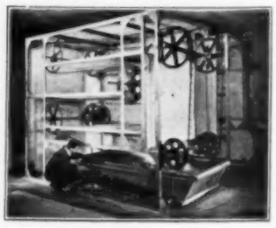
GEAR SPECIALTIES, INC.
2635 W. Medill Ave., Chicago 47, Ill.
Gentlemen: Please send me at once, a free copy of your new 6-page folder about G.S. Fractional Horsepower Gearing.
NAME _____
ADDRESS _____
BUYER'S NAME _____

GEAR Specialties, Inc.
Spurs · Spirals · Helicals · Bevels · Internals · Worm Gearing · Racks · Thread Grinding
2635 WEST MEDILL AVE., CHICAGO 47, ILL.
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

BREVITY—Identify by IEN - 7724 if you write the maker

PAINTING . . Dip and dry machine for use with lacquer, paint, varnish

Source: APPLIED ENGINEERING ASSOCIATES
139 E. 57th St., Dept. 2, New York 22, N. Y.



Illustrated in partial assembly is a new design of the company's automatic paint-dipping and drying machine. A chain conveyor travels in a closed circuit to carry work pieces suspended from cross bars or in racks through a dip tank and then through a drying area served by a forced-draft fan. Work supports are secured to attachments on the conveyor chain on each side.

Take-ups are included to control depth of immersion of the work as well as the angle and rate of extraction in order to produce tear-free, drain-free and drip-free surfaces of uniform coating thickness. Also the conveyor is driven at variable speed by an explosion-proof motor. Finished work is returned to the operator's position at the front of the machine. Each assembly is built to specification.

BREVITY—Identify by IEN - 7725 if you write the maker

PROTECTING . . Plastic coated glove to handle oily and sharp edge material

Source: MILBURN CO.
3244-48 E. Woodbridge St., Detroit 7, Mich.

Samples available upon request

Rough-Palm is a new fabric work glove coated with a vinyl-plastisol dispersion to present a rough slip-resistant palm. The glove is particularly suited to handle oily sheets and materials with sharp edges. The glove can be worn without fear of developing skin eruption or dermatitis. It is available at present in a knit-wrist style, Model B-2100-N.

BREVITY—Identify by IEN - 7726 if you write the maker

PRESS . . Support legs and guards for company's inclinable presses

Source: BENCHMASTER MFG. CO.
2950-54 W. Pico Blvd., Los Angeles 6, Calif.

Cast-iron legs for the company's 4 and 7½-ton presses and a new belt guard for the 1 and 4-ton standard units, for the 4-ton deep-throat and 7½-ton presses have been added to the company's line of inclinable-presses. The legs are equipped with an operating pedal for foot control. The guards are supplied with brackets ready to mount over the flywheel and motor sheave.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7727 if you write the maker

DO YOU KNOW... that

You can conserve strategic raw materials by using tungsten carbide cutting tools . . .

The efficiency of tungsten carbide cutting tools, measured in work output, is far greater than for any other class of tools . . .

"KNOW HOW"—the best productive use of *manpower, machines* and *materials* is essential in our present emergency. It is with this in mind that V-R is making available a fine new *text book*—CARBIDE CUTTING TOOLS—written by two eminent authorities.

This book removes the veil of highly technical research studies and supplies the man at the machine, the student, the designer and the engineer with a wealth of practical material.

CONTENTS: Machine Tools and the Carbides. Converting to Carbide Tool Angles. Machinability. Tipping a Carbide Tool. Grinding Single-Point Tools. Cutting Power, Speeds, Feeds. Carbide Tool Design. Coolants and Carbide Tools. Carbide Forming Tools. Carbide Milling Cutters. Sharpening Milling Cutters. Multiple-Edge Carbide Tools. Cutting Speeds, Feeds, Forces. Multiple-Edge Tool Design. Selection of a Carbide Tool Materials. Assembly. Grinding and Use of Tools. Index.

116 Pages. 203 Illus. Washable Cloth Binding. Price $1.50

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Send all Book Orders to: EDUCATIONAL TRAINING DEPARTMENT

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 7728 if you write the maker

Precision Equipment for Your Defense Jobs . . .

During World War II thousands of EXACT WEIGHT Scales were used by industry in general for precision weighing in hundreds of metal working operations. These operations, to mention but a few, covered selection of mass produced parts, counting of parts, balancing and final inspection. Other large operations were for shell loading and checkweighing of small and medium projectiles. If you have such operations now or for the immediate future do this now. Advise us promptly what your operation is and give us as full details as possible. Many of these operations call for (1) special work on our part (2) getting scarce materials, both of which can seriously delay this vital equipment when you need it most.

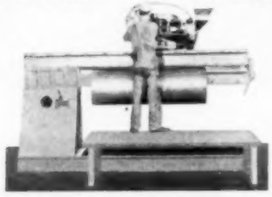
EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 7729 if you write the maker

REED ENGINEERING COMPANY — MODERN METALWORKING MACHINES

1009 W. Fairview — Carthage, Mo.



BENDING ROLLS ★ WELDING POSITIONERS & ROLLS ★ OFFSET & CONTOUR FORMERS ★ ASSEMBLY FIXTURES

HORN TYPE WELDING JIGS
FOR AUTOMATIC WELDING

★ In 6 Models, Capacities Up To 9 ft. x ¾ in.
★ Two Styles, For Light or Heavy Shells
★ Water-Cooled Copper Weld Backing Bars
★ Positive, Rigid Toggle-Action Clamping
★ Track For Any Automatic Welding Head

WRITE FOR BULLETIN 66

★ SPECIAL MACHINES & FIXTURES ★

BREVITY—Identify by IEN - 7730 if you write the maker

ASBESTOS-PROTECTED!

ASBESTOS CANNOT CARBONIZE!

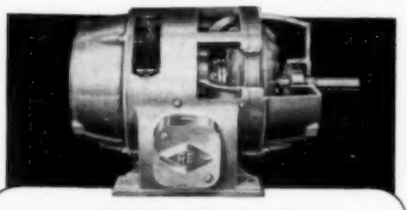
No motor is more durable than its windings. In U. S. Uniclosed Motors all windings are *asbestos-protected*. Motor life is tremendously increased because asbestos cannot carbonize and withstands highest temperatures

UNICLOSED U.S. MOTORS

Attractiveness of armored Uniclosed design adds eye appeal. ½ to 250 h.p. Write for interesting descriptive Bulletin featuring Uniclosed Motors.

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif. or Milford, Conn.

BREVITY—Identify by IEN - 7731 if you write the maker



NEW FLUID-SHAFT MOTOR GIVES SMOOTH LOAD ACCELERATION ...ELIMINATES NEED FOR CLUTCHES!

Reuland Fluid-Shaft motor with double reduction gear reducer.

Write for new Engineering Folder No. 1000.

REULAND FLUID-SHAFT ELECTRIC MOTORS are the only units with an integral fluid coupling. Their cost is much less than a conventional motor with drive attachment, and their ability to "take it" has already been proved on heavy jobs, including mixers, centrifugals and cranes.

Fluid-Shaft motors accelerate heavy loads smoothly without the aid of mechanical clutches. Overloads are eliminated. Will start heavier loads than regular motors of comparable horsepower!

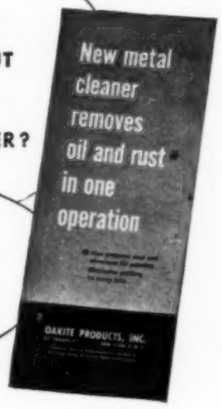
• Protection against "jamming" • Reduces maintenance
• No need to overmotor to start heavy loads • Wide H. P. range
• Uses less starting current • Shorter mounting dimensions

REULAND ELECTRIC CO.
ALHAMBRA, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 7732 if you write the maker

HAVE YOU HEARD ABOUT THIS NEW METAL CLEANER?

IT CAN SAVE MONEY FOR YOU



Oakite Compound No. 33

REMOVES OIL
at the same time that it
REMOVES RUST...
And at the same time it prepares the metal for painting

Oakite Compound No. 33 is a great soak cleaner for steel, cast iron, aluminum sheet and castings. It removes oil, rust, heat scale, other oxides, carbon smut, soldering and welding residues, identification inks and other soils. *It frequently eliminates pickling operations on moderately rusty steel.*

Oakite Compound No. 33 is great for hand-swabbing on metal surfaces too large to be soaked in tanks. It can save money for you in many ways.

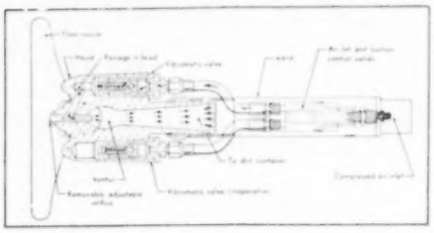
FREE For a copy of Folder F7993 "*New metal cleaner removes oil and rust in one operation*", write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. & Canada

BREVITY—Identify by IEN - 7734 if you write the maker

CLEANING . . Portable tool employs air jet to establish suction

Source: PATTERSON PRODUCTS
518-A Maccabees Bldg., Dept. VPC, Detroit 2, Mich.



Compressed air from a shop source at 80-lb. pressure or more is connected to the inlet back of the suction head in this new Vibro-Pneumatic industrial vacuum cleaner. The tool takes 2.7 to 7.2 cfm. depending on the size of its interchangeable orifice and on the air pressure. Four lengths of head assembly range from 14 in. to 6 feet. Three nozzle widths are 5, 8 and 10 inches.

An exhaust hose leads from the head to a dust-collector bag carried by the operator. A second design replaces the operator-carried bag with a caster-mounted tank suited for wet or dry operation. The tank holds 22 to 55 gallons.

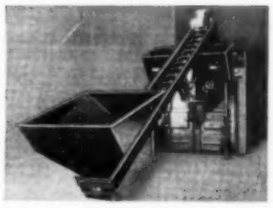
Air passes from the inlet through a tube connection to a spring-operated vibrating valve. It flows through this valve to produce interrupted action at 2,000 impulses per minute to issue from the centrally-located nozzle into the venturi chamber where it creates suction that will pick up dirt from a floor. The dirt-laden air passes toward the rear to the collector bag or tank.

A duplicate vibrator can be opened in place of the one with which suction is created. The air then passes through this valve at the same impulse frequency to issue at the head and break loose encrusted dirt and other foreign matter on a floor surface. Weight of the bag assembly is 7½ pounds.

BREVITY—Identify by IEN - 7735 if you write the maker

CONVEYING . . Screw type assembly designed to handle dry bulk materials

Source: AMERICAN COAL BURNER CO.
18-B East Erie St., Chicago 11, Ill.



Flo-Matic trade names new 16-ft. motor-driven screw conveyor which the company has designed particularly for stoker feed. It will handle wood chips, hogged wood, sawdust, coal in such an application. The screw measures 9 in. in diameter and has a 9-in. pitch. It operates in a trough measuring 12 in. in width. A standard feed hopper measures about 4½ by 3½ ft. at the top. It extends 33 in. above the top of the steel trough to provide 30 cu. ft. capacity. The drive calls for a ¾-hp. motor.

List price for the conveyor alone is $700. The hopper adds $150. The motor adds $60.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7736 if you write the maker

PAYS FOR ITSELF ON "HARD-TO-GET-AT" JOBS

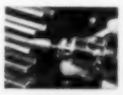
DREMEL *Electric* MOTO-TOOL

"THE POCKET-SIZE MACHINE SHOP"

MOST POWERFUL TOOL OF ITS KIND—APPROX. 27,000 R.P.M.

Grinding Dies

Sharpening Cutters



Burring Parts

Dremel Moto-Tools, widely used in industry for over 15 years, are World War II veterans—served in defense plants and military maintenance bases everywhere. Hundreds of operations—polishing and grinding dies, burring parts, sharpening cutters, etc.—performed in seconds without fearing down "set-ups". Moto-Tool is sturdily constructed for continuous duty. Weighs only 13 oz.—approx. 27,000 r.p.m.—dynamically balanced for vibrationless operation.

MOTO-TOOL KIT NO. 2, with 23 accessories, (high-speed steel cutters) and Model 2 Moto-Tool in natural finish hardwood case $23.50
MOTO-TOOL NO. 2, with one emery wheel point $16.50

WRITE FOR INDUSTRIAL CATALOG

DREMEL MFG. CO. Dept. 501-H RACINE WIS.

BREVITY—Identify by IEN - 7737 if you write the maker

MERCURY LIGHT-DUTY "TUG"

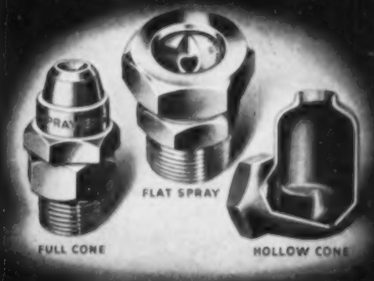
ELECTRIC TRACTOR

3 Wheel Model

The ideal haulage unit where floor, elevator capacities or operating space are limited. Tractor is only 70" long and 34" wide. Develops a maximum draw bar pull of 1,000 lbs. — sufficient to move a trailing load of 25 tons on smooth surface. Complete description and specifications in Bulletin 180-1. Request your free copy.

MERCURY MANUFACTURING COMPANY, 4132 S. Halsted Street, Chicago 9, Ill.

BREVITY—Identify by IEN - 7738 if you write the maker

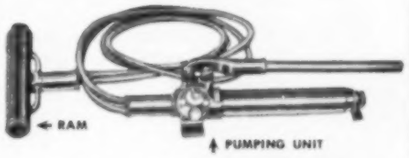


SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 7739 if you write the maker

Cut maintenance costs in YOUR plant . . . . .



with a HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

You can save manpower, time and money at hundreds of maintenance and production jobs with a H-W Push and Pull Hydraulic Jack. In models of 4, 10 or 20 tons capacity, these units offer direct push or pull power for moving, pressing, bending, straightening, lifting and lowering operations. Operated by remote control. Available with stand and press to give you a portable workshop. Get complete details from your H-W distributor, or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORP.
Waukesha, Wisconsin
Also manufacturers of a complete line of hydraulic jacks in models from 1½ to 100 tons capacity.

BREVITY—Identify by IEN - 7740 if you write the maker

ONLY The New Goulds Self-Priming Pumps Give *All* 5 Important Advantages

1. NO VALVES OF ANY KIND
2. NO RECIRCULATION OF LIQUID
3. OUTSTANDING EFFICIENCIES
4. POSITIVE, FAST-ACTING SELF-PRIMING
5. SMALL, COMPACT PRIMING CHAMBERS

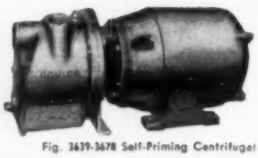


Fig. 3639-3678 Self-Priming Centrifugal

Choose From This Complete Line

INDUSTRIAL
¼ to 5 H.P. Capacities to 120 G.P.M. Heads to 135 ft. Send for Bulletin 636.1.

SUMP
¼ to 5 H.P. Capacities to 120 G.P.M. Heads to 135 ft. Send for Bulletin 627

PORTABLE
Gasoline engine, capacities to 58 G.P.M. Heads to 25 ft. Send for Bulletin 639.1.

GASOLINE ENGINE DRIVEN
1½ to 5 H.P. Capacities to 120 G.P.M. Heads to 135 ft. Send for Bulletin 638.1.

For complete information write

Goulds PUMPS INC. Seneca Falls New York

BREVITY—Identify by IEN - 7741 if you write the maker

"Power-Package" Unit for Roller and Belt Conveyors

The Standard HANDI-DRIVE

THIS self-contained drive unit provides tractive power for any gravity conveyor—belt or roller. Converts present conveyors to live roller or belt — quickly at low cost.

HANDI-DRIVE Bulletin No. IEN-851 gives complete information — how to apply to present conveyors or plan new system with standardized units — straight, curves, or inclines. Write for copy today.

STANDARD CONVEYOR COMPANY, NORTH ST. PAUL 9, MINN.

SEND FOR HANDI-DRIVE BULLETIN.

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 7742 if you write the maker

Sure..... Stainless Pipe is Tough to Get

But..... Here is a way to double the amount of pipe a mill can make from its supply of alloys

Light weight *Schedule 5* Stainless Pipe provides more feet of material from every pound of critical alloy. And *Schedule 5* pipe hooks up to existing lines of heavier pipe. The large inside diameter of *Schedule 5* pipe (standard pipe size O.D.) gives increased flow area. And the cost of this light weight Stainless Pipe is much lower than the cost of heavier pipe.

For the complete story about *Schedule 5* and the jobs it can do, return the coupon for a set of these Data Sheets.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

Please send me a set of the new Data Sheets describing light weight *Schedule 5* Stainless Pipe.

NAME TITLE
(Please Print)
COMPANY
ADDRESS
CITY ZONE STATE

NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 7743 if you write the maker

ALUMINUM . . Wall chart lists bending radii for aluminum alloy sheet

Kaiser Aluminum & Chemical Sales Inc.
1922-26 Broadway, Oakland 12, Calif.

Seven alloys and a utility sheet are listed in new 17 by 11-in. chart, "Recommended Minimum Radii for Cold Bends", which the company will send you upon request. Several tempers are included under each from .016 to .250 inch.

BREVITY—Identify by IEN - 7744 if you write the maker

BOY BURTON . . New potential salesman joins the company's organization at Western Springs

C. A. Burton, Jr., Inc.
4713 Woodland Ave., Western Springs, Ill.

We had hoped to present a new product description on Burton Boy, M3, originally developed for the company's own use on various maintenance jobs. Unfortunately the company tells us that "For the present, due to current material shortages, we are in very limited production on this new model, and in fact, do not think any will be available in the foreseeable future. However, should the situation ease, we will certainly take you up on your editorial offer."

Just for the record, "Charlie" has an overall length of 21 in. and an initial weight of 7 lb. 5¾ ounces.

BREVITY—Identify by IEN - 7745 if you write the maker

CALCULATING . . Plastic slide unit to find weight of metal sheet from its dimensions

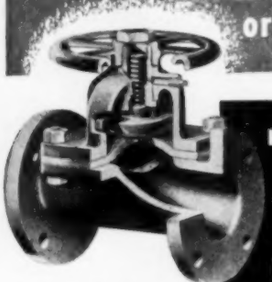
Dayton Rogers Mfg. Co.
2822-26 13th Ave. S., Minneapolis 7, Minn.

"Weight Calculator" consists of a circular slide on a rectangular back that measures about 3 in. square. Thickness of sheet steel is set against width of a given sheet. Weight then is read against the sheet length. Ratios are given to convert this weight into terms of aluminum, iron, copper, bronze, lead. The calculator is offered upon letterhead request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7746 if you write the maker

Now you can valve 66° Be Sulphuric Acid without leakage, dripping or sticking



HILLS-McCANNA *Diaphragm Valves* with L-1 **PLASTIC DIAPHRAGMS**

For temperatures to 125° F., pressures to 100 psi. Sizes ½" through 4". Write for complete details.

HILLS-McCANNA
diaphragm valves
saunders patent
Proportioning Pumps
Force-Feed Lubricators · Magnesium Alloy Castings
HILLS-McCANNA CO., 2347 W. Nelson St., Chicago 18, Ill.

BREVITY—Identify by IEN - 7747 if you write the maker

LEAKS HAVEN'T A CHANCE WITH *Plasgon*

When you seal a pipe joint with Cabot's Plasgon it's leak-proof — permanently. Plasgon stays *flexible* — resists vibration. It's impervious to oil, gasoline, water, steam and all common solvents . . . resists heat up to 350° F. and withstands considerable pressure. Plasgon is also ideal for making plastic gaskets.

You need Plasgon in your plant.

Plasgon is now available in black or white.

Write Today for free sample tube and complete information.

SAMUEL CABOT, Inc.
833 Oliver Bldg., Boston 9, Mass.

BREVITY—Identify by IEN - 7748 if you write the maker

"Bottlesby just can't seem to miss since he lined his glove with slip-resistant 4-WAY Safety Plate."

For greater safety under foot, in your plant and on your products

Inland 4-Way® Safety Plate

Firesafe — Safe Footing — Easy To Fabricate — Easy Assembly

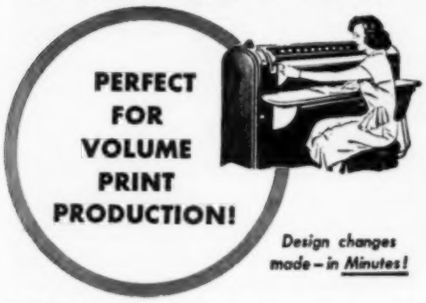
INLAND STOCKED BY LEADING STEEL WAREHOUSES

INLAND STEEL COMPANY, Dept. IEN-851
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas — Just Out! Bulletin F1. Complete engineering and application data. Send for it!

BREVITY—Identify by IEN - 7750 if you write the maker

Faster, Better, More Accurate...



The Ozalid STREAMLINER duplicates anything drawn, typed or written—in seconds!* Gives you permanent, accurate copies in any size—several colors—on a variety of papers, cloths and films. Printing speed: up to 10 ft. per minute. Changes quickly, easily made with Ozalid *intermediate!*

FREE: For complete information, write for booklet. OZALID, Dept. H-110, Johnson City, N.Y. Or call your local distributor.

*If light won't shine through your original, an inexpensive intermediary step is taken.

Cut Copying Costs ... Use OZALID

Johnson City, New York. Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

A Division of General Aniline & Film Corporation. *"From Research to Reality."*

BREVITY—Identify by IEN - 7751 if you write the maker

THE RIGHT STEP

to increased production with Towmotor MH*

The right step to increased production and lowered costs is the light step on Towmotor's accelerator that quickly puts Mass Handling to work. Loading and unloading operations and in-plant movement of materials speed up . . . hard to reach storage space is used profitably as Towmotor cuts handling costs as much as 95%. 12 Towmotor models handle loads from 1,500 to 15,000-lbs. To learn how Towmotor increases production, write for *"Handling Materials Illustrated."* TOWMOTOR CORPORATION, Div. 26, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all principal cities in U. S. and Canada.

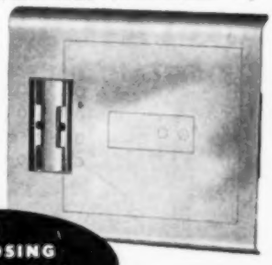
*MH is Mass Handling—the systematic movement of the most units in the shortest time, at lowest cost.

TOWMOTOR — THE ONE-MAN-BAND

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

BREVITY—Identify by IEN - 7752 if you write the maker



MODERN FUNCTIONAL DESIGN WITH THE SELF-CLOSING Flush Latch

HARTWELL H-4000

The unique design of the Hartwell H-4000 latch makes it extremely versatile with virtually no limitation to its application in the normal range of latch usage. It is equally adaptable to interior or exterior installation in sheet metal, plastics, plywood or solid wood, and its design makes possible the use of almost any type of operating handle. A door or access plate equipped with the H-4000 can be latched by simply pushing it closed. There are no levers to be pushed or pulled into place.

Write for new Flush Latch and Hinge Catalog.

HARTWELL COMPANY

9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

NEWS NOTES—Continued

"Booklet on how to install chain drives"

BREVITY—Identify by IEN - 7753 if you write the maker

BURNERS . . Booklet of data and formulae to assist in combustion calculations on oil burners

Cleveland Fuel Equipment Co.
7314-18 Associate Ave., Cleveland 9, Ohio

General information, data and formulae, operating data, are presented on natural-draft oil burner installations to assist in combustion calculations in new 4-page "Oil Burning Manual of Information". The booklet deals with topics such as causes of smoke, typical draft losses.

BREVITY—Identify by IEN - 7754 if you write the maker

CASTINGS . . Notes on product design in continuing series of data leaflets on castings

Superior Steel & Malleable Castings Co.
307-11 Graham Harbor, Benton Harbor, Mich.

Problem, solution and result are stated in each of three new data leaflets in the company's "Case History" series previously described IEN-10005-50. Each sheet presents a specific iron or steel casting, shows the original part, describes how the design was modified, the reasons for doing so, and results obtained. Ask for Sheets 4, 5 and 6.

BREVITY—Identify by IEN - 7755 if you write the maker

CYLINDERS . . A copy of Pneumatic Standards offered on request by the company as a 12-page booklet

Miller Motor Co.
4025-29 N. Kedzie Ave., Chicago 18, Ill.

Company has reprinted "J. I. C. Pneumatic Standards for Industrial Equipment" in booklet form similar to the "Hydraulic Standards" previously described IEN-43964-51. The booklet covers symbols, controls, compressors, pipe and fittings, valves, cylinders, tanks. A sectional drawing of the company's cylinder shows how it compares to the standards.

BREVITY—Identify by IEN - 7756 if you write the maker

DEFENSE PRODUCTION . . Information booklet on what records you will need for CMP material allotments

National Production Authority
Your Local Field Office

Three principal sections comprise new 24-page booklet, "Allotment Accounting for Consumers under CMP", which you can secure direct from your local office of the U. S. Department of Commerce. The first describes requirements to obtaining an allotment and how to handle it. The second presents three examples on the accounting involved. The third reproduces the forms employed.

BREVITY—Identify by IEN - 7757 if you write the maker

DRIVES . . How to install chain drives, booklet includes suggestions on operation, maintenance

Chain Belt Co.
1675 W. Bruce St., Milwaukee 4, Wis.

Bulletin 51-7 is new pocket-size 36-page booklet of useful information on drive and conveyor chains. Illustrations and condensed text present suggestions on chain selection, alignment, chain slack, direction of travel, sprocket care, lubrication recommendations by operating speed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7758 if you write the maker

REMOVE STUBBORN GREASE AND DIRT FROM METAL PARTS — EASIER, FASTER, MORE ECONOMICALLY WITH . . .

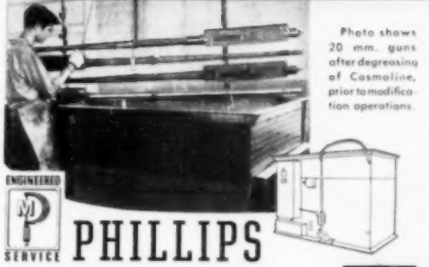


Photo shows 20 mm. guns after degreasing of Cosmoline, prior to modification operations.

ENGINEERED SERVICE

PHILLIPS VAPOR DEGREASERS

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

THE most heavily greased up parts will come clean easier and faster in a Phillips degreaser. High vapor temperature (250.2° F.) not only causes more dissolved grease to run off the metal, but makes for faster degreasing too. Wherever you have parts to clean, large or small, before plating, painting, rustproofing, service and repairwork, etc., you can do it better, faster and more economically with a Phillips degreaser. There's a standard model to meet your needs. Check with Phillips today.

Phillips MANUFACTURING COMPANY
3475 Touhy Ave. • Chicago 45, Illinois
Vapor Degreasers • Solvents • Parts Washers

BREVITY—Identify by IEN - 7759 if you write the maker

Udylite

CHEMICAL-RESISTANT ACE-SARAN PLASTIC

TUBE PIPE FITTINGS ROD SHEET

Udylite Ace-Saran is a tough thermoplastic material with unusual resistance to chemical attack. It is dimensionally stable, nonflammable and impervious to moisture. Ace-Saran is ideal for any INDUSTRIAL application where acids and other corrosive agents are encountered. Ask your Udylite Technical Man for additional information or write *The Udylite Corporation, Detroit 11, Mich.*

Pioneer of A Better Way in Plating

THE Udylite CORPORATION
DETROIT 11 MICHIGAN

BREVITY—Identify by IEN - 7760 if you write the maker

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 7761 if you write the maker

SLASH CLEANING and COOLING COSTS with REX FLAT SPRAY NOZZLES

• The hard-hitting flat sheets of water from Rex Flat Spray Nozzles do a top-notch job of cleaning or cooling a wide range of products—and at practically no cost.

Of simple, one-piece construction, they require no adjustment . . . assure a flat, uniform spray of maximum impact force. The only operating cost is for water, and consumption is very low.

Send for our descriptive booklet, using coupon below.

REX FLAT SPRAY NOZZLES

Chain Belt Company
1675 W. Bruce Street, Milwaukee 4, Wis. 50-211
Please send me a copy of Bulletin 50-38

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

BREVITY—Identify by IEN - 7762 if you write the maker

WRITE TODAY!

DICO'S WHEEL CATALOG Free!

A UNIQUE CATALOG SIMPLIFYING YOUR WHEEL ENGINEERING PROBLEMS

A MODERN LINE OF INDUSTRIAL RUBBER WHEELS DIAMETER 6"—18"

DICO CORPORATION
402 S.W. 16th ST., DES MOINES 5, IOWA

BREVITY—Identify by IEN - 7763 if you write the maker

SAFER LOAD BREAKING

New Switch Withstands Heavy Short Circuits Without Damage

For the first time in a safety switch, magnetic repulsion is used to break loads quickly, safely.

The unique "arc-quenching" action of Trumbull's HCI (High Capacity Interrupter) Type A switch provides extra safety and lengthens contact life by preventing pitting.

Other safety features: no exposed live parts when switch is OFF and door is open . . . no faulty indication—switch is either fully ON or fully OFF. Underwriters' Laboratory Approved.

Write for Bulletin TEC-10.

TRUMBULL (T) ELECTRIC

Department of General Electric Company
PLAINVILLE, CONNECTICUT

BREVITY—Identify by IEN - 7764 if you write the maker

S.S.WHITE Elastoplastic
PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

WRITE FOR BULLETIN P-4704

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO.
Dept. NP, 10 East 40th St.
NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

NEWS NOTES—Continued

"Information on how to use electric power"

BREVITY—Identify by IEN - 7765 if you write the maker

ELECTRIC POWER . . How to use it described in 20 sets of instruction and application data

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Eighteen data sheets in new looseleaf Bulletin GEA-4938-A summarize the information offered by the company in its "More Power to America" programs on the application and use of electric power. Most recent example is the "Motor Selection and Application Course" previously described IEN-4648-51. It includes nine slidefilms with accompanying 16-in. records, an instructor's manual, nine review booklets keyed to the records, and a carrying case, all at a list price of $100.

Other information assemblies, less recent, include visual and printed instruction material on the following topics:

"Industrial Heating Program"	List price $ 15
"Electric Arc Welding Program"	List price $200
"Materials Handling Program"	List price $175
"Industrial Power Distribution Program"	List price $ 35
"Resistance Welding Program"	List price $190
"Electronic Induction Heating Program"	List price $ 15
"Industrial Electronics Training Course"	List price $150

Also included are information assemblies on outdoor recreation, textile-plant modernization, oil-field electrification, infra-red lamp applications, sewage treatment, urban transit, laundry electrification, and five on farm electrification.

By asking for the bulletin you will receive details on each of the information assemblies together with an order blank which carries list prices on extra manuals and booklets.

BREVITY—Identify by IEN - 7766 if you write the maker

INVENTIONS . . Booklet outlines offer of company's research facilities in petroleum field

Sinclair Research Laboratories Inc.
630 Fifth Ave., 28th Floor, New York 20, N. Y.

Promising ideas of independent inventors in the field of petroleum products will be investigated by the company in its research laboratories at Harvey, Ill. The inventor must have a patent or patent application on his idea. The company will undertake test work if the idea is suitable. The inventor must agree to grant the company a non-exclusive license. Details are given in 16-page "Inventors' Booklet," available upon direct request to the company at the address above.

BREVITY—Identify by IEN - 7767 if you write the maker

LIGHTING . . Cardboard demonstrator model illustrates facts and recommendations on mine lighting

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

Two haulage ways in a mine are reproduced in miniature by new "Mine Lighting Demonstrator." The unit is a cardboard box, supplied knocked down, which measures 15 by 6 by 1¾ in. when assembled. Interior of one haulage way is black. The other is white to reproduce the interior of a mine that has been coated with rock dust or whitewash.

A window at the end of each haulage way lets you observe the figure of a man and a mine car at the opposite end. Translucent windows in the top simulate incandescent or fluorescent lamps spaced on 10-ft. centers. You can vary amount of lighting by covering several or all of the openings, or by changing intensity of light falling on the box, to demonstrate the effect of artificial light wattage, whitening a mine interior, lamp spacing. The model is available upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7768 if you write the maker

SAVE Maintenance AND Towel Costs WITH

Sani-Dri ELECTRIC Hand or Hair Dryers

Save valuable maintenance time and eliminate continuing towel expense. New, improved features make Sani-Dri faster drying . . . provide quick, automatic hand or hair drying service 24 hours a day year after year! Sani-Dri is a permanent solution to washroom sanitation and drying problems—and SAVES UP to 85% of WASHROOM COSTS!

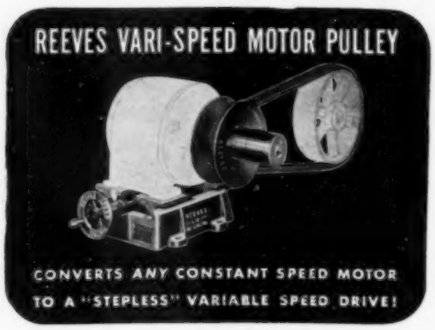
All Sani-Dri Electric Dryers are GUARANTEED, and have carried the Underwriter's Seal of Approval for over 18 years!

SEND FOR NEW BROCHURE showing all models and installation pictures.

Distributors in Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3481 Commonwealth Ave. • North Chicago, Ill.

BREVITY—Identify by IEN - 7769 if you write the maker

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE Catalog IN116-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA
Recognized Leader in the Specialized Field of Speed Control Engineering

BREVITY—Identify by IEN - 7770 if you write the maker

Pick 6 employees whose work is below average

Don't tell them what it's all about—just let our man test their eyes (the test takes less than four minutes).

A large percentage of slow workers, with high spoilage and accident rates, *are handicapped by defective vision.*

Thousands of plants have found that they simply cannot afford to hire a worker without testing his eyes. Periodic re-checking also pays them handsome profits.

Write us for a sample test of a few of your below-average employees — or for Bulletin E.

KEYSTONE VIEW COMPANY, Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

KEYSTONE *Occupational Visual Service*

BREVITY—Identify by IEN - 7771 if you write the maker

PIGTAILS FOR INSTANCE

Bushels of pigtails for condensers, resistors, batteries etc., are now . . .

PRECISION WELDED WITH EASE by RAYTHEON WELDPOWER* UNIT

Photo shows a typical application—a 0.025" dia. tinned copper pigtail welded to a light gauge brass cap. The new Raytheon Model G. Weldpower Head and Raytheon Condenser Weldpower Control Units make possible high speed precision assembly of small parts involving dissimilar non-ferrous metals. Ask us to show you how Raytheon Condenser Weldpower can be applied to your assembly problems.

RAYTHEON Condenser Weldpower Control Units, complete with Model G. Weldpower Head are available in 63, 225 and 1080 watt-second capacities.

*Reg. U. S. Pat. Off.

Write for complete information. Address Dept. IN-8

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
WALTHAM 54, MASS.

BREVITY—Identify by IEN - 7772 if you write the maker

IN WIRE-MESH PRODUCTS LET JELLIFF DO IT!

For 70 years we've been weaving Wire Mesh. And a good part of that time we have also been making things of Wire Mesh for people who find it is cheaper, easier and generally more satisfactory to "let Jelliff do it."

From big Dipping Baskets to tiny precision filters — from fuel strainers to what-is-it gadgets — JELLIFF's Custom Production Department turns out fabricated Wire-Mesh products at speed, price and precision that mean lower costs and a stronger competitive position for our many customers.

If you buy or make wire-mesh assemblies as components of your own products and have not yet had an estimate from Jelliff, write today for details. No obligation, even if you enclose a blueprint for us to figure on. Address Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS · FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 7773 if you write the maker

LOUISVILLE Safe-Weight ALUMINUM PRODUCTS

Aluminum EXTENSION LADDERS

TWO SECTION—THRU 48 FEET
THREE SECTION—THRU 70 FEET

Rugged enduring strength . . . developed by patented method of locking corrugated rungs to side rail. Special extruded aluminum side rail designed for maximum strength. Proven Economy and Safety in service at hundreds of large industrial plants and by countless contractors.

HEAVY DUTY STEPS

2 thru 20 feet

DOUBLE RUNG STEP FOR EXTRA RIGIDITY

PLANKS . . . . 12 in.
STAGES . . . . . 20 in.
6 thru 28 feet
MAXIMUM STRENGTH LIGHT WEIGHT

All Louisville Safe-Weight equipment engineered for heavy service. Built of extruded aluminum, fully riveted, complete with aluminum fittings. All Standard ladder and scaffold products included in line. Write for further details.

LOUISVILLE METAL PRODUCTS CO.
1101 W. OAK STREET, DEPT. A, LOUISVILLE 10, KENTUCKY

BREVITY—Identify by IEN - 7775 if you write the maker

PACKAGING . . Conveyor and timer handles containers under weight filler

Source: B. F. GUMP CO.
1311-15 S. Cicero Ave., Chicago 50, Ill.

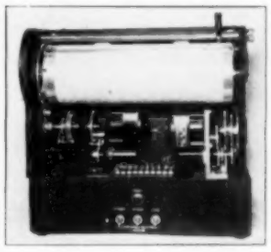
New combination of motor-driven belt conveyor and timer unit handles cartons, cans or jars to package dry powdered or granular materials in unit quantities to 5 lb. in connection with the company's Edthauer-Duplex net weighing filler. The new equipment mounts in a table as shown in the illustration. Each installation is built to meet given requirements. Average floor space required is 24 by 60 inches. The equipment will maintain speeds to 28 one-pound or 35-half-pound containers per minute.

Containers are placed on the belt conveyor by hand or are fed from a supply conveyor. The first empty one is moved up to and held under the discharge spout of the weigher by the belt and control action. The rest of the line is held back of the spacing table. When the weighed amount of material has been discharged into the container it is released and moves on its way to the closing station. The next empty container is then brought to a stop under the weigher to catch its quota and the cycle repeats for the filling.

BREVITY—Identify by IEN - 7776 if you write the maker

RECORDING . . Strip chart recorder plots curve for two variable factors

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



Type MD-2 is a new strip-chart recording instrument for use with any stress-strain testing machine in which hydrostatic pressure, in either the loading or weighing circuit, is proportional to load applied to the specimen. The recorder employs Microformer miniature variable transformers having usable core movements of 0.120 inch.

Displacement of the core of an external sensing Microformer upsets a self-balancing bridge of which it and the unit in the recorder are a part. The unbalance signal is amplified by an electronic circuit to drive a servo motor. This moves the core of the recorder Microformer to the same position as the external core thus re-establishing electrical balance and at the same time operating the recorder drum or stylus.

One motor and Microformer assembly applies on the stylus. A separate one applies on the drum for chart movement. Both provide maximum displacement of 10 in. for full-scale reading. Size is 14 by 10 by 13 inches. Weight is 50 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7777 if you write the maker

Heat Where You Need It... QUIETLY with

DUNHAM UNIT HEATERS

You're looking into Dunham's new Vertical Discharge Unit Heater—designed to throw heat *exactly* where needed, while maintaining perfect balance between air volume and final air temperatures.

Note the sturdy motor support cone that directs air from heating element to fan and protects motor from excessive heat and dust; the resilient motor mountings that minimize noise and vibration.

Dunham's improved header design assures uniform steam distribution, eliminates air pockets. For complete information, WRITE FOR BULLETIN 1301-11.

DUNHAM
C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada: C. A. Dunham Co. Ltd., Toronto
In England: C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

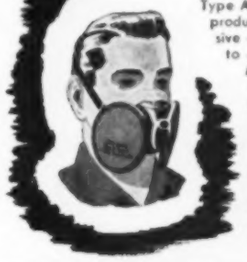
BREVITY—Identify by IEN - 7778 if you write the maker

BE FRESH STAY FRESH

Wear a DUPOR No. 46

U.S.B. of M. APPROVED RESPIRATOR FOR TYPE "A" AND LEAD DUSTS

More than 46 sq. in. filtration area. Soft rubber face mask. U.S.B. of M. Approval BM-2124 for LEAD Dusts and ALL other toxic or poisonous dusts as well as Type A (Pneumoconiosis or Silicosis producing dusts). Unit has exclusive controlled breathing valves to guard against stale air. Maximum visibility—no interference with goggles or glasses.



Sample sent $3.25 pp

H. S. COVER
South Bend, Ind.

BREVITY—Identify by IEN - 7779 if you write the maker

THE MOST SANITARY WASH FIXTURES

One Bradley sprayhead replaces four faucets.

Hands Touch ONLY CLEAN RUNNING WATER

NO FAUCETS

Write for Bulletin K-711

For extra sanitation Bradley DUO-Washfountains incorporate foot-control to guard against contagious washbowl contacts. Self-flushing bowl eliminates dirty water collections.

Each Bradley DUO serves two people simultaneously, cuts plumbing costs, and reduces water consumption. BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin

BRADLEY Duo washfountains

Distributed Through Plumbing Wholesalers

BREVITY—Identify by IEN - 7780 if you write the maker

for the RIGHT answers to YOUR alloy fastening problems . . .

CALL HARPER!

HARPER CAN HELP YOU...

because Harper makes them *all*—has fastenings in exactly the *right* alloy, size, type and finish you need. Harper deals exclusively in nonferrous and stainless steel fastenings—bolts, nuts, screws, rivets and accessories in brass, bronze, copper, aluminum, Monel and stainless steel that provide maximum resistance to corrosion, heat, abrasion and stress. Over 7000 items in stock ready for delivery from warehouses and distributors, nationwide. Mail coupon for new catalog.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave., Morton Grove, Ill.
Send my copy of new Harper Catalog.
(Please print—use margin for more room.)
Name.....
Address.....
City..... State.....

BREVITY—Identify by IEN - 7781 if you write the maker

Next winter, keep heat and heating costs from

"HITTING the CEILING"

Thermolier Unit Heaters are the most economical answer to many tough heating problems. Easy to install and to relocate at any time to meet changes in plant layout or heating requirements. Waste no valuable floor or wall space. Aim heat where you need it. You pay only for heat you use . . . instead of banking heat wastefully up at the ceiling. Heat is turned on and off by throwing a switch, manually or automatically by simple thermostatic controls. Thermoliers have a patented internal cooling leg which permits use of inexpensive, simple thermostatic trap. Write for full descriptive catalog.

Thermolier Unit Heaters

GRINNELL

Grinnell Company, Inc., Providence 1, R. I.
Branch Warehouses in principal cities.

BREVITY—Identify by IEN - 7782 if you write the maker

- **at all times**
- **under all conditions**
- **throughout its long lifetime of service**

Homestead Lever-Seald Valves operate faster, too—16 to 28 times faster than screw-stem type valves. They require no lubrication . . . provide unobstructed, straight-line fluid flow with minimum pressure drop . . . afford maximum protection to sealing surfaces against corrosive and erosive line fluids. And because only a quarter-turn is needed for full opening or closing, they are ideal for installation in restricted areas where operation of other types of valves might be difficult.

Next time you have damaged or sticking valves, replace them with Homestead Lever-Seald Plug Valves. Once you use them you'll never be satisfied with ordinary valves.

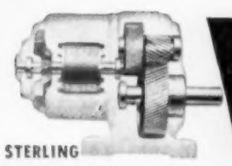
For complete information write for Valve Reference Book No. 20-2.

HOMESTEAD-LEVER-SEALD PLUG VALVES

HOMESTEAD VALVE MANUFACTURING COMPANY
Editorial inquiries only
P. O. BOX 85 CORAOPOLIS, PA.

BREVITY—Identify by IEN - 7783 if you write the maker

power modernization



demands modern engineering design

STERLING

SLO-SPEED

OUTSTANDING FEATURES...

Simplified gear system—balanced design—compact—rugged—heavy overhung loads—highly efficient—abundant lubrication—low output shaft—Herringbone Rotor—positive oil seals—protected—streamlined—through ventilation—quiet operation—AGMA speeds—long life—every unit operates in any position.

Ask for your copy of pictorial bulletin No. E-62 showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

NEWS NOTES—Continued

"Booklet of suggestions on self-tapping screws"

BREVITY—Identify by IEN - 7784 if you write the maker

FASTENINGS . . Booklet on self-tapping screws includes a two-page recommendation chart by service

Parker-Kalon Corp.
202 Varick St., New York 14, N. Y.

Tables of recommended hole sizes and application information are given in new edition of the company's 24-page pocket-size Booklet 480-B. These data are grouped by type of material such at steel and brass, aluminum, non-ferrous castings, plastics, impregnated wood, asbestos board.

BREVITY—Identify by IEN - 7785 if you write the maker

MAGNESIUM . . House publication describes characteristics and applications of the metal

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

New information on properties and uses of magnesium is presented in the company's house publication, "Dow Magnesium Topics." This information includes extracts from technical papers, articles on specific subjects such as machining magnesium. Your name will be added to the list upon request to receive the publication.

BREVITY—Identify by IEN - 7786 if you write the maker

MANAGEMENT . . Booklet for employees uses "comic-book" method to tell facts about inflation

Pictorial Media Inc.
205 E. 42nd St., Rm. 318, New York 17, N. Y.

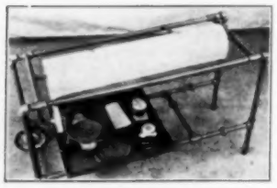
Bemis Bro. Bag Co. of St. Louis cooperated with the company in producing new 16-page "comic"-style booklet to state the facts about inflation. It also is featuring the booklet in its current advertising and has distributed copies to its own employees. Title of the booklet is "How Stalin Hopes We Will Destroy America."

Pictures and simple text are used to show how inflation can weaken a country, how it has happened in the past, how it is happening here and now, what causes inflation, how to combat it. List price is $10 for 100 copies.

BREVITY—Identify by IEN - 7787 if you write the maker

MASKING . . Dispensing cart you can make from printed plans which the company will supply

Industrial Tape Corp.
Highway No. 1, New Brunswick, N. J.

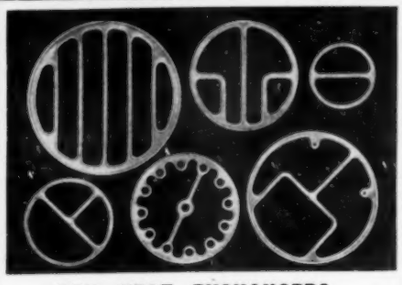


Company offers instructions without charge to assist you in construction of the dispensing cart illustrated. This unit is known as Fleet Industrial Masker. It holds a roll of paint-spray masking paper to 36 in. in width together with a roll of masking tape. Feature is ability to dispense the paper with masking tape already in place along one edge.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7788 if you write the maker

MELRATH GASKETS



FOR HEAT EXCHANGERS, CONDENSERS, CYLINDER HEADS

Style No. 20 (Special) Metal and asbestos double-jacketed gaskets for high temperatures and pressures. Made in any metal or shape to fit your needs.

"There's a Melrath Gasket for Every Purpose!"

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

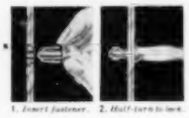
BREVITY—Identify by IEN - 7789 if you write the maker

This fastener works through thick and thin!

Spring-Lock works whether panel thicknesses run over or under specifications! Spring wire deflects automatically to handle greater or lesser thicknesses. Spring-Lock's design flexibility makes it more than a fastener: it can be adapted as a shelf support, door strike, knob or any similar panel-mounted device. Many standard shapes and sizes of Simmons Spring-Locks are available from stock.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.
Spring-Lock • Quick-Lock • Roto-Lock

HERE'S HOW SPRING-LOCK WORKS



1. Insert fastener. 2. Half-turn to lock.

- **Installation is BLIND**
- **Installation is EASY: no special tools are needed**
- **Installation is QUICK: a half-turn locks it in place**
- **Installation is SECURE: the *spring* steel *locks* the fastener, resists vibration**

Send for details and samples, or write us about your fastening problem.

BREVITY—Identify by IEN - 7790 if you write the maker

Abart Speed Reducers are precision built to give you years of maintenance-free service, even under severe operating conditions. There are 75 models in the complete line of Abart Speed Reducers...one of which will meet your exact requirement for each specific application. Ratings from 1/50 to 168 h.p. and ratios up to 10,000 to 1. Abart Speed Reducers are compact, oil-tight and sealed against dust. For heavy-duty, precision speed reducers, specify Abart.

SEND FOR COMPLETE CATALOG
It will aid you in selecting the Abart Speed Reducer which is exactly suited to your need.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

BREVITY—Identify by IEN - 7791 if you write the maker

SAFETY IS THE BEST POLICY IN LOAD BINDERS

THE CANTON "TAKE-UP" ACTION

picks up slack, binds in one operation. Design and heavy duty construction eliminates spread or release while in operation. Each factory tested, guaranteed for specified capacities. 7 sizes from 4,000 to 35,000 lb. rating, priced $3.00 to $14.80. Continuous action makes them a versatile tool in steel, lumber, machinery hauling, logging, oil fields, rigging. Two sizes made without take-up feature.

POPULAR AMERICAN FORGE RATCHET LOAD BINDERS

COMPLETE SAFETY IN TIGHTENING, BINDING, RELEASING LOADS . . . versatile "turnbuckle" principle has wide range of application. One man easily operates without aid of extension pipe; no kick-backs, full 8" take-up. 3 sizes, $14.90 to $18.10. Special size ideal for trueing steel work on building construction.

CANTON CAST PRODUCTS CO.
Maker of Concap Exhaust Protectors
2404 13TH STREET N. E. • CANTON 5, OHIO

BREVITY—Identify by IEN - 7792 if you write the maker

FASTER, EASIER DRAFTING

40% faster—actual tests prove

When you eliminate time wasted in picking up and laying down tools, you naturally draft faster, easier. Up to 40% faster if you're using a Bruning machine (as proved by actual tests).

Your Bruning drafter combines triangles, T-square, straightedge, protractor and scales, all in one precision instrument. Waste motions are cut to the bone — accuracy becomes both easy and *automatic*.

Other exclusive Bruning features naturally contribute: Touch Control Indexing, for example; or our "Equipoise" mechanism (the best gravity compensator ever devised for inclined board use). Get the details in our interesting descriptive booklet.

SEND TODAY for our free 20-page booklet A-1055. Use it as your standard of drafting machine values.

BRUNING

CHARLES BRUNING COMPANY, INC.
Dept. H-81, 100 Reade Street, New York 13, New York

BREVITY—Identify by IEN - 7793 if you write the maker

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

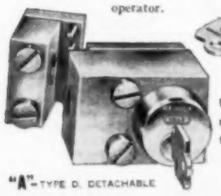
A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a tack and used only by an authorized operator.

"B"—TYPE F FLAT MOUNTING



"A"—TYPE D. DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

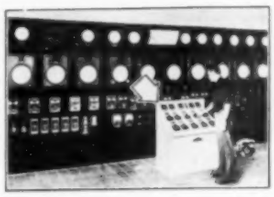
Write for Bulletin 1700 for many more details.

RAILWAY AND INDUSTRIAL ENGINEERING CO.
KENN STREET • • • • GREENSBURG, PENNSYLVANIA

BREVITY—Identify by IEN - 7795 if you write the maker

CONTROL . . Pneumatic equipment for remote process variable control

Source: BAILEY METER CO.
1065 Ivanhoe Road, Cleveland 10, Ohio



Mini-Line trade names a new assembly of miniature equipment for indicating, selecting, positioning control in connection with boilers, turbines, process equipment. All of the equipment for a specified installation mounts in a cabinet assembly as indicated in the illustration and occupies about one third of the space required for standardized instruments to cover equal functions.

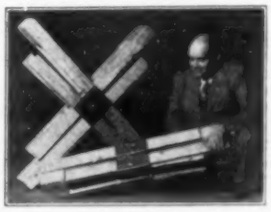
A typical control can include indicators for related operating factors, annunciator equipment for high and low alarms, remote, manual and automatic selector valves for air-operated control, remote set point adjustments for distant controllers, bias adjustments to change control relationships, control switches for electrical equipment. Trends and permanent records are centralized at a separate panel of recording instruments which need not be part of the control station but should be located close by and within view of the operator.

Multi-Point indicators are available in units to assemblies of ten. Depth in each case is 5 inches. Height is 4¾ in., and width ranges from about 2 to 12¼ in. depending on the number of units. A selector valve measures 9½ in. in depth by 4½ in. in width and 6¼ in. in height. A remote manual relay measures 9½ in. in depth, 2½ in. in width, 6½ in. in height.

BREVITY—Identify by IEN - 7796 if you write the maker

HANDLING . . X-shaped pallet made of wood, available in three types

Source: SPRING WOOD PRODUCTS INC.
51 Austin Road, Geneva, Ohio



List price ranges from $4.85 to $7.15 each in this new Spring A-C pallet. Type A in light-duty single-deck construction, Type B in heavy-duty double-deck design and Type C also heavy duty and double deck make up the line. Type B is for fork-lift trucks only. Type C has leg boards chamfered for truck-wheel entry with 3¾-in. clearance between decks and can be employed with fork or hand-lift trucks.

Each type is available in four sizes with leg lengths at 36 to 60 inches. Load capacity is 1 ton for the 36-in. size in the light-duty design. It is 1½ ton in the same size for the other two.

The legs hinge outward on a center locking pivot to form an X-shaped square or rectangle. They collapse to lie parallel for return to the shipper. Collapsed size of the smallest unit is 6 by 9 by 42 inches. A center stud is connected with a locking lever that is threaded on the bottom for tension adjustment. Rigidity is provided in the center by channels and angles in the guide plate.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7797 if you write the maker

High Production Milling *Saves Labor... Cuts Costs*

For *high production with precision*—put the work on Kent-Owens Milling Machines! They're designed for rapid, easy set-up and operation. Rugged . . . with twin-post head mounting that assures balanced load—no chattering. Practical features throughout to help you *produce more . . . save labor . . . and reduce costs!* Write for bulletin. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

BREVITY—Identify by IEN - 7798 if you write the maker

Open and Shut

HANSEN FEATURE *that means split second* **ON-THE-JOB INSPECTION**

On-the-job servicing of Hansen Tackers is speeded up by the Take-up Jaw. Quick as a flash it opens or closes and provides for cleaning and reassembly—in seconds!

Wherever tacking or fastening operations are required, use Hansen with its time-and-money-saving features.

REQUEST BOOKLET.

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Chicago 40, Ill.

Hansen ONE-HAND TACKERS

BREVITY—Identify by IEN - 7799 if you write the maker

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For use with all makes of suitable stencil duplicating products.

BREVITY—Identify by IEN - 7800 if you write the maker

BEATS CORROSION AND DUST!

IN CHEMICAL, liquid fuel, milling, coal handling — any industry faced with corrosive vapors, combustible or dust laden atmospheres — Type 371 General Purpose Starters will give unfailing start-stop service, and complete protection! Wall-mounted design permits low original cost . . . space saving, economical installation. This starter is small enough to be located near the controlled motor.

Rolling-wiping contact action . . . low inertia moving parts . . . automatic reset temperature overload relays and other features add up to longer use without maintenance. Select Type 371 Motor Starters for 2300 volt squirrel-cage motors to 350 horsepower. Call your nearby A-C representative or write to Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B7274. A-3452

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 7801 if you write the maker

Ask Sta-Warm to tailor compound melting equipment to your requirements

YOU'LL then get the right amount of melted compound in the right place at the right time . . . and at lowest over-all long-time cost.

The Sta-Warm Method helps you keep costs down and production up to schedule. There's no obligation on your part if you want to open with a barrage of pointed questions about your own compound melting problem. *Ask Sta-Warm today for recommendations.*

50 gal. compound melter with motor driven agitator and molasses gate valve. Standard Sta-Warm compound melters range from tiny hand held wax melters to 1,000 gal. mother tanks. Accessories and fittings to suit.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 7802 if you write the maker

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REDUCE STORAGE COSTS

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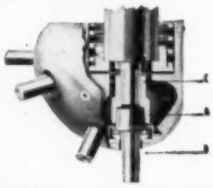
BREVITY—Identify by IEN - 7803 if you write the maker

MORE HOLES PER HOUR—PER DOLLAR

Increase production of any standard drilling machine by adding a Lign-o-matic, the only drill turret with the patented, self-centering principle that guarantees sustained accuracy equal to the drilling machine itself.



FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

PROVED PRODUCTION INCREASE — Turret indexes faster than tools can be changed or work moved to another spindle. A single Lign-o-matic will release 5 drilling machines for other work and still show increased production and reduced costs on original job.

VERSATILITY — Fits any standard drilling machine without altering the machine. Handles operations such as drilling, reaming, counterboring, and tapping (on reversible spindle machines), up to ½" diameter in any material.

PRECISION — Patented, self-centering tapered drive (A) automatically locks turret spindle (B) into exact alignment with drilling machine spindle (C) for sustained accuracy.

GUARANTEE — May be returned in 10 days for any reason for full refund of purchase price. Two-year guarantee against defective parts.

PRICE — Model D, 6 spindles with No. 2 Jacobs male taper $235.00
Chucks extra at established prices.

DELIVERY — Currently, 2 weeks.

☐ Please rush ..... Lign-o-matic turrets for
(drill press make) ..... (size) .....
(quill dia.) ..... (spindle taper) .....
My name .....
Title .....
☐ Please send literature on Lign-o-matic turret.
(Attach coupon to company letterhead)

HOWE & FANT, INC.
524 FLAXHILL RD., SO. NORWALK, CONN.

NEWS NOTES—Continued

"How to prepare a plant against atomic attack"

BREVITY—Identify by IEN - 7804 if you write the maker

MATERIALS . . Reference handbook on 8,800 materials from Abrasives to Zirconium

McGraw-Hill Book Co.
327 W. 41st St., New York 18, N. Y.

New Seventh Edition of "Brady's Material Handbook" is a 922-page book of basic information on natural and synthetic materials used by industry. These include abrasives, alloys, chemicals, compounds, fibers, metals, minerals, ores, pigments, plastics, solvents, woods. List price is $8.50.

Physical and chemical properties are given on each of the 8,800 materials along with substitute and alternate materials, patented and trade-named products, all in readily-understood manner. A separate section at the rear contains charts, maps and data tables on world production of industrial materials.

BREVITY—Identify by IEN - 7805 if you write the maker

PLANT PROTECTION . . Book of suggestions on how to prepare a plant against atomic attack

Walter Kidde & Co.
673-77 Main St., Dept. A, Belleville 9, N. J.

New information booklet, "How to Prepare Your Plant For Atomic Attack", is offered without charge to assist in emergency planning. It describes why you should be prepared, effects of an atomic bomb, plant organization, shelter and building construction, fire fighting, planning for sustained production. The 32-page booklet also contains a bibliography.

BREVITY—Identify by IEN - 7806 if you write the maker

POWDERED METAL PARTS . . Booklet on design with drawings to illustrate its recommendations

Wel-Met Co.
108-12 Gougler Ave., Kent, Ohio

Comparison of power metallurgy with other production methods for metal parts, design factors and limitations, mechanical properties of powdered-metal parts, a dictionary of terms employed, are given in new 12-page booklet, "Design of Powder Metallurgy Parts". Drawings show easily-produced parts and those difficult to produce.

BREVITY—Identify by IEN - 7807 if you write the maker

PYROMETER ACCESSORIES . . Useful information on how to select and use thermocouples and accessories

Bristol Co.
Griggs & Kelsey Sts., Waterbury 20, Conn.

"User's Manual" is the first section in revised 56-page Bulletin P-1238, just released. It covers pyrometry principles, thermocouple types, protecting tubes, extension wires, drawings of suggested installation methods, and a three-page selection list by specific application. "Buyer's Guide", the second section, presents catalog data on thermocouple assemblies and parts. "Calibration Data" consists of 12 tables for base and noble-metal thermocouples.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Other sources may be listed in the index, page 102

BREVITY—Identify by IEN - 7808 if you write the maker

HAVE YOU A... VOLTAGE REGULATING PROBLEM?

With the Acme Electric Voltage Stabilizer, a fluctuating line voltage can be automatically corrected to obtain the maximum performance and efficiency from electronic equipment, electrified machines and appliances.

Available in capacities of 15, 25, 50 VA.

For manual control, the Voltage Adjustor permits regulation over a range from 65 to 145 volts, or 145 to 240 volts

Write for bulletins.

ACME ELECTRIC CORPORATION
268 WATER ST. CUBA, NEW YORK

Acme ACME Electric TRANSFORMERS

BREVITY—Identify by IEN - 7809 if you write the maker

Specify Darnell for Complete Satisfaction

SAVE EQUIPMENT
SAVE FLOORS
SAVE MONEY
and TIME

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CASTERS & E-Z ROLL WHEELS

DARNELL CORP. LTD. 60 WALKER ST., NEW YORK 13, N. Y.
LONG BEACH 4, CALIFORNIA 36 N. CLINTON CHICAGO 6, ILL.

BREVITY—Identify by IEN - 7810 if you write the maker

Proper Maintenance Repair and Overhaul depend upon Fine Chemical Cleaners and Solvent Products

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TRADE MARK

FINE ORGANICS, INC.
Aviation-Industrial Chemicals Div.

- EMULSIONS
- DEGREASERS
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Write or wire: Dept. M

Aviation — Industrial Chemicals Division
FINE ORGANICS, INC.
211 East 19 Street New York 3, N. Y.

BREVITY—Identify by IEN - 7811 if you write the maker

Complete COAXIAL CABLE ASSEMBLIES
Now available from
Federal

This new service offers the same "Precision Production" that made Federal the outstanding name in H-F cables

More than *good* cable and *good* connectors are needed to make *good* assemblies. The secret of their efficiency and dependability is *the skill with which the two are joined.*

And that's where Federal's new coaxial cable assembly service is *tops.* Federal has years of cable manufacturing experience . . . a know-how that achieved the production of huge quantities of complete assemblies during World War II. A feature of Federal's new service is approval of the U. S. Signal Corps and the U. S. Air Force for the new low-temperature, non-contaminating thermoplastic jacketed cables — *an original development by Federal.* Write to: Dept. F-523.

Manufacturer of America's most complete line of solid dielectric cables

Federal Telephone and Radio Corporation — 100 KINGSLAND RD. CLIFTON, N. J.

BREVITY—Identify by IEN - 7812 if you write the maker

GOES A LONG WAY

to eliminate weld spatter cleanup

Unsightly costly weld spatter simply wipes off, in a matter of seconds, when you brush or spray Protect-O-Metal No. 2 in the weld seam on adjacent surfaces before welding. And you save up to 85% of weld cleaning labor, conserve man-hours for productive work.

Welders like Protect-O-Metal because it contains no organic materials, cannot cause smoke, fumes, or odors. *A little goes a long way* . . . costs 1/10¢ per foot of weld . . . saves up to three times its cost in time savings alone. Order a trial gallon ($3.25) on a no risk basis. If you're not completely satisfied we will cancel the invoice.

PROTECT-O-METAL

POM

GWSMITH

G. W. SMITH & SONS, INC. 5404 Kemp Rd., Dayton, O.

BREVITY—Identify by IEN - 7813 if you write the maker

For Lubricating Devices Call On GITS First!

GITS Bros. covers the *entire range* of lubricating devices: Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges. Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod styles. Threaded or Drive-type. Elbow or Straight.

GITS Bros. offers the most complete selection of standard styles.

GITS consistent quality in design, materials and machining has made Gits Lubricating Devices the standard for industry for more than 40 years.

GITS Lubricating Devices are far-famed for solving tough oiling problems at low cost.

GITS Bros. Engineering Staff—true specialists in lubrication engineering—is at your disposal.

Write today for free illustrated Price Guide Catalog. Use it as your handy reference for lubricating devices.

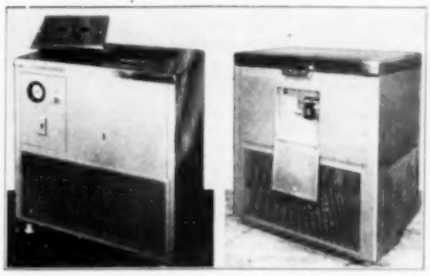
GITS BROS. MFG. CO.

1854 S. Kilbourn Ave. • Chicago 23, Ill.

BREVITY—Identify by IEN - 7815 if you write the maker

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: MURPHY & MILLER INC.
1326-28 S. Michigan Ave., Chicago 5, Ill.



Work space measures 11 by 11 by 15 in. in Model LT1-40, to the left in the illustration. The space measures 35 by 14 by 14 in. in the Model LT4-90 assembly to the right. Both are new designs in the company's line of low-temperature equipment for production and laboratory uses. List price of the larger unit is $2,985.

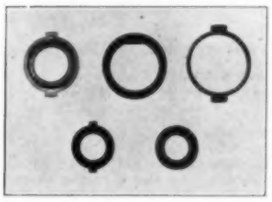
The smaller of the two assemblies is served by a hermetically-sealed air-cooled refrigerating unit with controls to set and maintain temperature within 2 deg. F. at any point between minus 40 deg. F. and room temperature. The unit is driven by a 110-volt 60-cycle single-phase motor. Freon 22 is the refrigerant. The housing is made of steel and mounts a plug-type top-opening lid with a double-gasket seal. Insulating sleeves are available through the lid into the cold compartment to specification. Floor space measures 38 by 26 inches. The cold chamber is a water-tight stainless-steel liner. Refrigeration is provided on four sides of this chamber.

The larger assembly employs two hermetically-sealed water-cooled refrigerating units with motor drive for connection to a 220-volt 60-cycle single-phase ac. source. Controls are provided for operation within 2 deg. F. of any setting from minus 90 deg. F. to room temperature. The steel housing is equipped with a top-opening lid mounted on hinges and provided with a double-gasket seal and latch. The cold chamber here also is a water-tight stainless-steel liner refrigerated on four sides. Floor space measures 47 by 32 inches.

BREVITY—Identify by IEN - 7816 if you write the maker

SEALING . . Powdered metal rings as specified for rotary mechanical seal

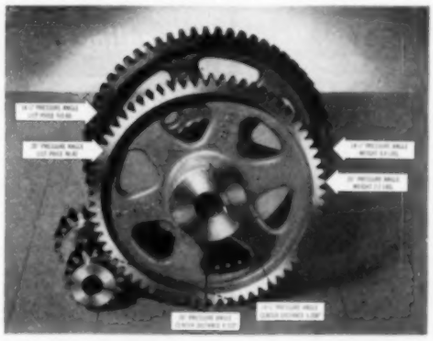
Source: NATIONAL MOLDED PRODUCTS INC.
1943-47 Mill St., St. Marys, Pa.



Outside diameters ranging from 5/8 to 4 in. are available in quantity production to specified design in a new line of powdered-metal sealing rings. The mating faces can be lapped to an exact finish. Typical applications are in the seals employed in water pumps, washing machines, electric motors. Typical units are shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7817 if you write the maker



Specify BOSTON 20° PRESSURE ANGLE GEARS

and SAVE
16.9% in Space
23.4% in Weight
21.2% in Cost
Both the 20° and the 14½° Pressure Angle pairs of gears pictured are rated 1.2 HP.

Boston standardized 20° pressure angle gears are available *from stock* at 80 authorized Boston Gear distributors—one near you

For stock sizes and types, see Boston Gear Catalog No. 55. Free copy mailed on request.

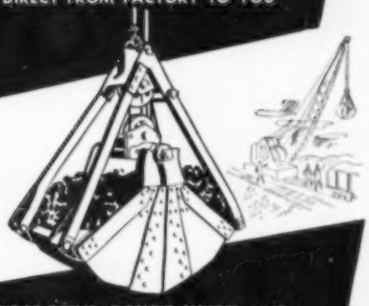
BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 7818 if you write the maker

BROWNHOIST BUILDS BETTER BUCKETS

—for less money

DIRECT FROM FACTORY TO YOU



ROPE-REEVE, POWER WHEEL AND LINK TYPE

Write for illustrated catalogue

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

BREVITY—Identify by IEN - 7819 if you write the maker

SAVE HANDLING TIME
AVOID CONFUSION
FACILITATE STORAGE

The MHS Work Carrier is a sturdy, flexible device for the transfer, storage or shipment of work parts or sub-assemblies. Stacked vertically, by means of the nesting plugs at the corners, these units constitute a rigid storage bin structure. Mounted on casters, they serve as factory trucks for the transfer of parts between processes. They are easily handled by the conventional lift truck or crane.

Write for Catalog R2 for detailed specifications.

Mechanical Handling *Systems, Inc.*
4605 NANCY AVE. • DETROIT 12, MICH
Offices in Principal Cities

MHS

BREVITY—Identify by IEN - 7820 if you write the maker

Eagle MICROFLEX

A CHOICE OF OVER 100 TIMER OPERATING COMBINATIONS USING THREE SEPERATE CONTACTS.

For simple or complex applications, one of these combinations will solve your Control Problem!

Write for EAGLE BULLETIN 110

AN EAGLE TIMER FOR "EVERY TIMING PROBLEM"

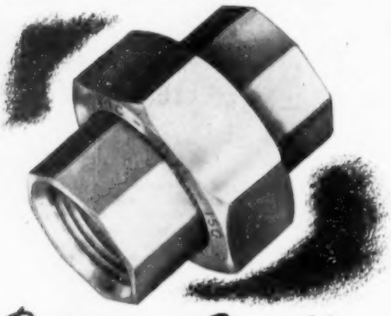
EAGLE SIGNAL CORPORATION Moline, Illinois

EXPORT DEPARTMENT 13 EAST 40th ST. NEW YORK 16, N. Y.

BREVITY—Identify by IEN - 7821 if you write the maker

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
NEW CASTLE, INDIANA

BREVITY—Identify by IEN - 7822 if you write the maker



Pick PIC Steel Unions
for your original equipment!
Unusually Attractive! STRONGER! 100% Zinc Plated

Here's a steel union for 150# service with *exactly* the features required by original equipment manufacturers. It's bright in appearance, attractive — designed to blend with newly manufactured products. Ends are uniformly flat-sided to speed installation with open-end wrenches — made of steel pipe coupling stock for *extra* strength. A special wedge-type bronze seat assures tightness. Zinc plating *even on threads* gives top rust protection. The price? — less than a galvanized, no more than a black malleable union.

Write for Free Samples!

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 7823 if you write the maker

WHEN ACCURACY COUNTS...
Contact SCHERR!
MAGNE-BLOX
SPEED SURFACE GRINDING SET-UPS!
• SAVE YOUR MAGNETIC CHUCKS
• ELIMINATE CLAMPS
• ELIMINATE HOLDING DEVICES

★ GRIND WORK SQUARE...
★ GRIND WORK PARALLEL...
★ HOLD ROUND PIECES!..
•EVERY MAN CAN OWN HIS OWN•
WRITE FOR ILLUSTRATED FOLDER
GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST., N. Y. 12, N. Y.

NEWS NOTES—Concluded

"What one company is doing in industrial research"

BREVITY—Identify by IEN - 7824 if you write the maker

RECORD KEEPING . . Tool crib control using triplicate form described in new bulletin

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Starting with a triplicate form filled out by a worker, new 6-page Bulletin KD-641 traces two methods of handling the printed records of tools issued from a shop crib. One method employs the company's "Kolect-A-Matic" equipment with no detail posting, the other its "Kardex" equipment when detail posting of withdrawals and returns is required.

BREVITY—Identify by IEN - 7825 if you write the maker

RESEARCH . . What the company is doing in research activity shown by new picture book

E. I. du Pont de Nemours & Co.
Room 2518, Nemours Bldg., Wilmington 98, Del.

Pictures and brief text are employed in new 28-page book, "The Story of Research", to describe how industrial research is performed, the scope of the company's current activities, what research people do, how research has affected the national life, examples of products based on research.

BREVITY—Identify by IEN - 7826 if you write the maker

SHEARING . . Wall instruction chart on selection and setting of rotary shear blades

Simonds Saw & Steel Co.
510-A Safety Fund Bank Bldg., Fitchburg, Mass.

"Shear Selector" chart is an 8½ by 16½-in. wall card that lists recommendations on the company's "Red Streak" rotary shear blades or knives by type and thickness of material to be sheared. Illustrated instructions are presented on setting for both horizontal and vertical clearances by thickness.

BREVITY—Identify by IEN - 7827 if you write the maker

TIRES . . Operating suggestions in booklet on how to conserve vehicle truck tires

B. F. Goodrich Co.
448-52 S. Main St., Akron 11, Ohio

Correct inflation, loading and load distribution, correction of mechanical irregularities, matching and spacing of duals, tube care, tire rotation, are among the topics in new 8-page "9 Ways to Get More Miles Out of Your Truck Tires". Worn tires and their causes are illustrated. The back cover is a table of tire loads at various inflation pressures.

BREVITY—Identify by IEN - 7828 if you write the maker

TRUCKS . . House publication articles on specific applications of power lift trucks

Yale & Towne Mfg. Co.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Initial article in the Spring issue of "Off the Cuff", company's house publication, describes how a rubber company used power lift trucks to improve their handling setup for some 7.5 millions pounds of material per month. Other articles tell of various applications. Your name will be added to the mailing list on request to receive the publication.

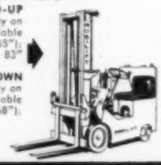
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7829 if you write the maker

Cut Your Materials Handling Costs
...with MOBILIFT
Lev-R-Matic DRIVE
Fork Lift Trucks

Mobilift gas operated fork trucks are compactly designed for split second maneuverability everywhere.
3 functionally grouped levers give operator finger-tip control of tilting, elevating, forward-back movement.
Push-Pull Lev-R-Matic controls and a multiple disc clutch smoothly transmit power forward and back. There are NO GEARS TO SHIFT.
Roller chain-driven uprights allow unobstructed view between uprights.

MODEL "E" STAND-UP TYPE, 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 65"); 72" Mast (lift 117"); 83" Mast (lift 108").
MODEL "ER" SIT-DOWN TYPE, 2,000-lb. capacity on 15" load center. Available with 63" Mast (lift 68"); 83" Mast (lift 108")



"MOBILIZE" Your Materials Handling ...Write for Specification Bulletins

MOBILIFT Lev-R-Matic DRIVE
MOBILIFT CORPORATION
833 S. E. Main St., Portland 14, Oregon
CHICAGO • EAST RUTHERFORD, N. J. • ATLANTA • DALLAS • BERKELEY

BREVITY—Identify by IEN - 7830 if you write the maker

Less Weight-Lifting —More Production!

If he raises a ten-pound portable tool only 200 times a day, the operator lifts a total of 2000 pounds.

You can spare your portable tool operators this "strong-man" effort with Appleton Retract-o-Reel. This spring-operated balancing reel entirely supports the tool, holding it up out of the way when not in use.

The Retract-o-Reel can be adjusted to counterbalance any power tool up to ten pounds in weight. Put the Retract-o-Reel to work for you soon.

APPLETON
Retract-o-Reel
Spring Operated Balancing Reel
FOR PORTABLE TOOLS
Sold Through Electrical Wholesalers
APPLETON ELECTRIC COMPANY
1716 Wellington Avenue • Chicago 13, Illinois
Branch Offices and Resident Representatives in All Principal Markets

APPLETON
CONDUIT FITTINGS • LIGHTING EQUIPMENT • OUTLET AND SWITCH BOXES • EXPLOSION-PROOF FITTINGS • RECEPTACLES

BREVITY—Identify by IEN - 7831 if you write the maker

It's a good rule to check with
WALES
before punching or notching angles, channels, extrusions and sheets – BY ANY METHOD

● Save your valuable time and effort in designing and building special hole punching and notching dies by calling on Wales-Strippit FIRST for their recommendations. A large percentage of the time of Wales engineering staff is spent in consultation . . . in recommending . . . and in developing applications for Wales independent, self-contained STANDARD Hole Punching and Notching Equipment. Wales Service Engineers are strategically located throughout the country. Tap their wide experience by putting your fabrication problems up to them TODAY.

The catalogs below describe and illustrate Wales Hole Punching Units that punch mild steel up to ½" thick and Wales Notching Units that notch mild steel up to ¼" thick.

Write for Wales fully-illustrated, functionally colored catalogs TODAY.

CATALOG BL featuring Wales Type "BL" Hole Punching Units for punching mild sheet steel up to 1/8" thick.

CATALOG C featuring Wales Type "C" and "E" Hole Punching Units for punching angles, channels, and extrusions up to 1/8" thick.

CATALOG CD featuring Wales Type "CD" Hole Punching Units for punching holes over the entire sheet in mild steel up to 1/8" thick.

CATALOG CJ featuring Wales Type "CJ" Hole Punching Units and Type "CN" Notching Units for punching and notching mild steel up to 1/4" thick.

BULLETIN G featuring Wales Type "G" Hole Punching Units for punching mild steel up to 1/2" thick.

CATALOG N featuring Wales Type "N" Notching Units for notching mild steel up to 1/8" thick.

"THE GROWTH OF AN IDEA" BULLETIN describes and illustrates the evolution of Wales Equipment and what it will do for you.

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, *Chairman*
361 PAYNE AVE., NORTH TONAWANDA, N. Y.
(Between Buffalo and Niagara Falls)
WALES-STRIPPIT OF CANADA LTD., HAMILTON, ONTARIO

BREVITY—Identify by IEN - 7833 if you write the maker

BREVITY—Identify by IEN - 7834 if you write the maker

New! all purpose PROPANE TORCH

MUTUAL B-91

With

REFILL CYLINDER

- PORTABLE
- LIGHT BRAZING
- SOLDERING
- SWEATING
- MELTING
- HEATS to 2300° F.
- ICC CYLINDER

PLUMBERS, TINNERS, LINESMEN, REPAIRMEN

Use PROPANE—hot, fast, clean, safe and most convenient fuel known. This MUTUAL B-91 Torch is ready for instant use. No pumping, priming or waiting. No dirty soot. Flame won't blow out. Easy and safe to light and adjust. Over 4½ hrs. continuous use in each cylinder. Refills sold or rented. Variety of torch tips and burners available separately or as kit shown. Send TODAY for complete details.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3400 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

BREVITY—Identify by IEN - 7835 if you write the maker

Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Mogulectric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Mogulectric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 7836 if you write the maker

METAL . . Design strengthened brass is perforated to form a speaker grille

Source: RIGIDIZED METALS CORP.
664-P Ohio St., Buffalo 3, N. Y.

Pattern 2-WL-D is employed in a new application in which brass strip is rolled, perforated and cut into sections to form a speaker grille for a radio cabinet. The pattern is one of a range of designs the company is prepared to roll into specified metals to produce a decorative pattern and to strengthen the metal.

Pattern 2-WL-D is used in the upper side outlets with Pattern 5-WL in the top and Pattern 2-WL in the bottom side outlets. All are oxidized and high-lighted for finished appearance. The metal gage is 0.025 inch. It is not necessary to use a wire screen back of the grille since the pattern itself will exclude rodents.

BREVITY—Identify by IEN - 7837 if you write the maker

FABRIC . . Bonded to latex foam, for use in upholstery, can be laundered

Source: ANDREWS-ALDERFER PROCESSING CO.
126-5 Ash St., Akron 8, Ohio

Samples available upon request

Andal trade names a new combination of fabric and foamed latex to provide a material suitable for use in upholstery with body strength, wearing qualities and resistance to wrinkling. The fabric can be die or deck cut. It can be sewed, tacked and cemented. Desired colors of the latex foam, in gages from 1/16 to ¼ in., can be integrated with most types of upholstery fabrics including such materials as tackle twill, cotton-back satin, woven plastic-coated fibers not previously practical for the purpose. Fabric width ranges from 45 to 65 inches. Rolls are available to 75 yd. in length.

BREVITY—Identify by IEN - 7838 if you write the maker

ASSEMBLY . . Roll type machine to combine sheets of glued materials

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.

Motor driven machine provides a new means to roll together flat sheets of material on which glue has been applied. The machine mounts rubber-covered pressure rolls with provision for adjustment to combine materials to ½ in. in thickness in standard construction or to 1¼ in. when specified. Roll width is 24 to 48 inches. Floor space required for a 30-in. machine measures 45 in. in width by 16 in. in length. A safety device separates the rollers to prevent accident. The machine is mounted on casters.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7839 if you write the maker

KWIK-MIX Moto-Bug® FORK LIFT

FOR ONE-THIRD TO HALF THE COST of other industrial lift trucks, here is the Moto-Bug Fork Lift . . . has 1,000-lb. load capacity, and 2½-foot lifting height. Simple, power-driven hydraulic pump raises and lowers load. Forks are 20 in. long (30 in. optional) . . . quickly adjustable to 33-in. width for pallets, boxes, barrels, crates.

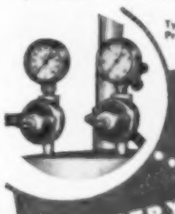
Weighing only 1400 lbs., Moto-Bug Fork Lift safely works over old warehouse floors, in elevators, on light ramps. Overall width is only 33 in. Turns around in its own length, has full speeds forward, reverse . . . climbs 20% ramps fully loaded.

At still lower cost, a 500-lb. cap. Fork Lift with manual hydraulic pump also is available. Both sizes are interchangeable with 1200-lb. flatbed, 10 cu. ft. hopper, and scraper blade.

Contact your Kwik-Mix distributor or write to us for bulletin.

KWIK-MIX CO. FORT WASHINGTON, WIS. (Kaehring Subsidiary)

BREVITY—Identify by IEN - 7840 if you write the maker



Type "A-31" Small Volume Pressure Reducing Valve

CASH-ACME VALVES DEMANDED BY INDUSTRY *Everywhere!*

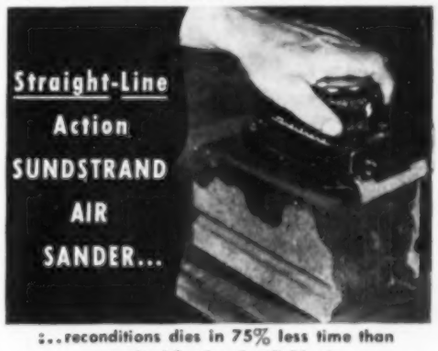
Offset Printing Eliminator Manufacturer Specifies CASH-ACME

The wet spray or dry powder method, which fixes "just-off-the-press", wet printed matter, and prevents smear in offset printing, is controlled by a series of CASH-ACME Valves. Without the consistent, unfailing operation of these two CASH-ACME pressure reducing and regulating valves, resulting smudge of printing would cause thousands of dollars loss. More and more industries specify CASH-ACME because they recognize the value and savings of dependable valves. Write for information describing the part CASH-ACME Automatic Valves can play in the successful operation of your product.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Ave.
Decatur, Illinois

BREVITY—Identify by IEN - 7841 if you write the maker



. . . reconditions dies in 75% less time than required for hand polishing!

Heavy dies used by The Washburn Company for flattening the stainless steel shanks on kitchen tools must be highly polished, free from scratches. Otherwise, imperfections show up in the finished products and dies must be replaced more often. Now, the Sundstrand Single-Pad Sander machine polishes dies in 75% less time than required for hand polishing. For solutions to your sanding problems on wood, metal, or plastics, see your nearby distributor or write for Bulletin IE-8.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 7842 if you write the maker

POWERS

No. 11 Self-Acting TEMPERATURE INDICATING REGULATOR

Other dials available

SAVES LABOR—Stops Losses caused by over-heating

Automatically controls temperature of liquids or air at any point desired. Needs no compressed air or electricity for its operation.

3 Plus Values give you more for your money: 1) Easy to read 4" dial thermometer shows temperature of liquid or air being controlled, makes it easy to adjust regulator for proper temperature. 2) Has valve stem lubricator. 3) OVER-heat protection.

Powers No. 11 Regulators are available also without dial thermometer in a variety of 60° F. ranges and valve bodies ½" thru 8".

ECONOMICAL • DEPENDABLE • SIMPLE • EASY TO INSTALL

▶WRITE FOR BULLETIN 329 • THE POWERS REGULATOR CO.
2737 Greenview Ave., Chicago 14, Ill. • Offices in over 50 Cities

BREVITY—Identify by IEN - 7843 if you write the maker

FIVE INSTRUMENTS IN ONE

Quickly and Easily Measures . . .

COMPLETE LOAD-VISUALIZER KIT as shown above—list price $170.00 (with 200-amp current transformer).

VOLTS, AMPERES, WATTS, VARS, AND POWER FACTOR

The AF-2 has a-c current ranges from 0-2.5/5/25/50 amps, up to 1000 amps with split-core transformers. Voltage ranges are 0-150/300/600. It's available for immediate shipment. See your G-E distributor, or write General Electric, Schenectady 5, N.Y.

602-210

GENERAL ELECTRIC

BREVITY—Identify by IEN - 7844 if you write the maker

DILLON DYNAMOMETERS

remove all guesswork from tension or stress problems

WIDE CAPACITY RANGE

500 to 30,000 lbs. The perfect lab or field instrument for showing tension or stress. Hundreds of uses. Small—Light—Accurate—Low cost. Write today for illustrated bulletin.

▼ Testing Wrecking Truck Winch and Boom. Modern automobile wrecking trucks are often called upon to lift and pull exceedingly heavy loads. Above, the DILLON DYNAMOMETER is checking these factors in a new model wrecking truck manufactured by the Ashton Power Wrecker Equip. Co., Inc. Pull is against a heavy semi-trailer. Tests like these on heavy equipment are very easy with a DILLON DYNAMOMETER.

▼ Here is a DILLON DYNAMOMETER at the Ford Motor Co. in Dearborn, Mich. employed to "buckle" a car frame through ordinary turnbuckle. In this way, the Body and Frame Section laboratory was able to determine the load necessary to take full shock absorber punishment.

W. C. DILLON & CO., INC.
PRECISION INSTRUMENTS FOR PRECISION TESTING
1421-K SOUTH CIRCLE AVENUE • FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 7845 if you write the maker

FREE! 44-Page Book

gives you complete data on wire rope and chain fittings

Save time! Save trouble! Laughlin's authoritative, illustrated Catalog-Data Book answers all types of problems involving wire rope and chain fittings. Read all about the wide array of *standard* Laughlin items. Dispense with needless, costly "specials!" Yours for the asking!

LAUGHLIN
THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

GET YOUR COPY NOW ...at no cost or obligation

THE THOMAS LAUGHLIN CO.
18 Fore St., Portland 6, Maine

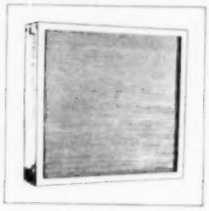
Please send Catalog-Data Book #150 to:

Name ..... Position .....
Company .....
Street .....
City ..... Zone .. State .....

BREVITY—Identify by IEN - 7846 if you write the maker

DUST COLLECTING . . Filter panel delivers 99.98 per cent of clean air

Source: CAMBRIDGE CO.
348-52 S. Geddes St., Syracuse 1, N. Y.



Pleated paper made of soft felt-like material, containing fine asbestos fibers, is the active element in this new filter panel. The paper is folded and packed in an accordion-pleat arrangement. Two sizes measure 24 by 24 by 5⅞ in. to rate 500 cfm. or by 11½ in. to rate 850 cfm of air flow.

Applications are indicated wherever essentially clean air is needed for processing or where toxic or radio-active fumes or dust must be prevented from escaping to the atmosphere and from entering working areas or shelters. Dust, smoke, fumes, radio-active particles, spores and microscopic foreign matter as small as 0.2 to 0.3 micron in diameter are removed from the air stream. Static resistance when new is a little less than 1 in. of water.

BREVITY—Identify by IEN - 7847 if you write the maker

STEEL . . For hot working dies, low carbon nickel molybdenum type

Source: HEPPENSTALL CO.
4618-22 Hatfield St., Pittsburgh 1, Pa.

Technical data in 4-page bulletin

Prestem trade names a new hot-working die steel for forge presses and upsetting machines. The steel shows an increase in surface hardness as temperature increases to about 1,050 deg. F. It is manufactured in blocks and bars for solid press dies, insert dies, upsetter dies and punches. It is available also in annealed condition requiring a hardening and tempering treatment under the name Presneal.

BREVITY—Identify by IEN - 7848 if you write the maker

TESTING . . Temperature indicators designed to melt at given temperatures

Source: TEMPIL CORP.
132 W. 22nd St., 3rd Floor, New York 11, N. Y.

New rating, at 2,000 deg. F., has been added to the company's line of Tempilaq fluids previously described IEN-10265-50. The material is now available in 12 or 13-deg. steps between 113 and 400 deg. F. and in 50-deg. steps from 400 to 2,000 deg. F. The material itself is brushed on a surface and allowed to dry. It will remain dry until its rated temperature is reached, then melt and run.

Tempilstiks, a crayon form of the material, and Tempil Pellets are also available in similar steps covering the same range of temperature. The pellets can be supplied, in addition, in 50-deg. steps between 2,000 and 2,500 deg. F.

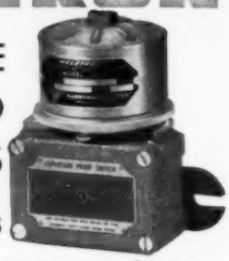
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7849 if you write the maker

BREVITY—Identify by IEN - 7850 if you write the maker

MELETRON

PRESSURE ACTUATED SWITCHES *for* EXPLOSIVE ATMOSPHERES



Accurate response to any pressure or vacuum change may be achieved with safety in atmospheres containing vapors of ethyl, ether, gasoline, alcohol, acetone, petroleum, naphtha, lacquer solvents as well as natural gas or grain dust.

Meletron explosion-proof models incorporate U.L. approved Micro-Switches. Pressure elements are adjustable in the field without exposing the circuit.

Meletron is your electric-hydraulic link.

SOLE DISTRIBUTOR FOR INDUSTRIAL APPLICATIONS

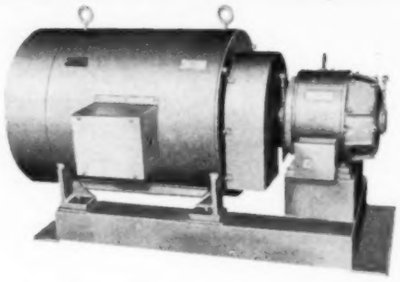
BARKSDALE

1566 EAST SLAUSON AVENUE, LOS ANGELES 11, CALIFORNIA

BREVITY—Identify by IEN - 7851 if you write the maker

Do You Have Use For Practically Pure 400 CYCLE POWER

Less than 1/2% total Harmonics?



★ For use in Laboratory and Production testing of high performance electronic equipment Bogue has developed a line of single and three phase 400 Cycle Synchronous Motor-Generator Sets ranging from 3 to 100 KW with total harmonic content less than 1/2%. This extreme quality in wave form is secured thru precision design, careful selection of material and quality control in manufacture.

Special units with less than 1/10% total harmonics available.

These sets can also be furnished with magnetic amplifier static voltage regulators when the utmost in reliability and consistancy in voltage regulation is required. Output frequency is exactly 400 cycles at any load—no load to full load!

If you are interested in this type power, Bogue engineers will be glad to furnish oscillograms and wave analysis of typical sets built for this requirement. You can always depend on...

MAGNETIC AMPLIFIER CONTROLLED

BOGUE PRECISION POWER

Bogue Magnetic Amplifiers...

● *Provide maximum dependability with low operating costs. New type core material greatly increases performance. Completely static, no moving parts. Unaffected by vibration or shock, no warm-up period required. Write for Bulletin #86; no obligation.*

MAGNETIC AMPLIFIERS • MAGNETIC CONTROLLERS
AC & DC MOTORS • AC & DC GENERATORS
VOLTAGE & SPEED REGULATORS • SWITCHBOARDS

BOGUE ELECTRIC MANUFACTURING CO.
40 IOWA AVENUE • PATERSON 3, N. J.

Bogue — SINCE 1882 SPECIALISTS IN FINE MOTORS & GENERATORS

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

BREVITY—Identify by IEN - 7853 if you write the maker

STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

BREVITY—Identify by IEN - 7854 if you write the maker

TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY ELECTRIC

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION

ELECTRIC WHEEL CO.
2814 SPRUCE · QUINCY, ILLINOIS

BREVITY—Identify by IEN - 7855 if you write the maker

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity 1/4". Simple, rugged design, easy maintenance.

FREE FOLDER Provides full information and shows sectional views.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

WEBSTER INSTRUMENT CO.
Dept. I, 11856 Mississippi Ave. Los Angeles 25, Calif.

BREVITY—Identify by IEN - 7856 if you write the maker

TESTING . . Electric meter to read current, resistance, voltage

Source: HICKOK ELECTRICAL INSTRUMENT CO.
10544-48 Dupont Ave., Cleveland 8, Ohio

Model 450 is a new volt-ohm-milliammeter with a 5-in. lucite case designed to eliminate danger of breakage in everyday use. The instrument is battery operated. It weighs 2¾ lb. and overall dimensions are 5¾ by 2½ by 8⅝ inches.

Voltage, both ac. and dc., is read in six ranges maximum at 2.5 to 5,000 volts. Resistance is to 1,000 ohms on a 5-ohm center scale and to 100 megohms on a 500,000-ohm center scale. Two intermediate ranges are to 10,000 ohms and to 1 megohm. Current range is in five steps between 2.5 and 1,000 milliamperes dc., between 0 and 50 microamperes dc., and between 0 and 10 amperes dc. Switches select desired range.

BREVITY—Identify by IEN - 7857 if you write the maker

GRINDING . . Wheel lubricant to prevent wheel build up and "loading"

Source: NO-LOAD CO.
132 Fairhome Ave., Clyde, Ohio

Single tube lists at 70 cents

No-Load trade names a new grinding-wheel lubricant that is supplied in solid form in a cylindrical container measuring 1 by 10 inches. The material is pressed out of the container and is contacted against a grinding wheel to deposit a thin film about the same depth as the pores in the abrasive. One tube is sufficient for 40 to 80 applications. The material can be used on regular grinding wheels and on set-up wheels using bonding agents other than animal glue.

A treated wheel will cut without build-up or loading, particularly in operation on the softer metals such as aluminum and brass. It serves also on abrasive belts set up with resin adhesives to materially increase the belt life.

BREVITY—Identify by IEN - 7858 if you write the maker

PROTECTING . . Salt tablet dispenser for workers operating in hot locations

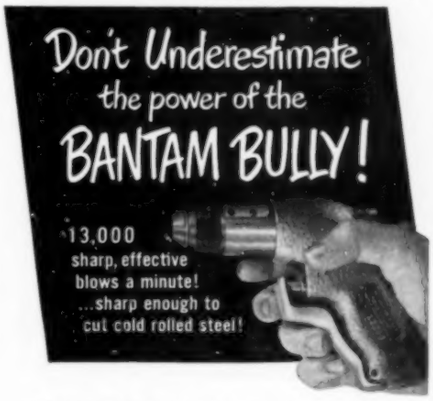
Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

Glass container holding 750 salt tablets rides in inverted position on the plastic base of this new Ace dispenser. An outlet at the bottom releases one tablet at a time. The dispenser lists at $2.50. The salt tablets list at 75 cents in quantities of 1,000 for refill use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7859 if you write the maker

Don't Underestimate the power of the BANTAM BULLY!



The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic division of **Herbrand Tools**
4738 WARREN ROAD, GARFIELD HEIGHTS, OHIO

BREVITY—Identify by IEN - 7860 if you write the maker

FASTER . . . MORE EFFECTIVE FIRE CONTROL

WITH THE ANSUL Stream Pattern

PATENT PENDING

plus

BETTER HEAT-SHIELD PROTECTION

***only* Advertise the Nozzle! . . .**

. . . because the *nozzle* on your ANSUL Dry Chemical Fire Extinguisher is *water-tight* . . . it *won't* become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant *can use the ANSUL extinguisher effectively . . . and only Ansul has a nozzle* to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

EXCLUSIVE FEATURES: Water-tight construction • Provides a modified cone-shaped stream pattern without hole in the center of the stream • Each nozzle gas pressure tested after assembly • Special spring loaded packing to insure lasting water-tightness. • Designed for use by inexperienced operators. • Low velocity, more effective stream of dry chemical.

Send for File No. 648. You will receive our catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 7861 if you write the maker

NEW! **DODGE SLIDE-SET VISE**

Cut away view

SLIDES IN "NEUTRAL"!
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

BREVITY—Identify by IEN - 7862 if you write the maker

Pheoll WOOD SCREWS

- Reduce Assembly Time
- Join Parts Better
- Improve Product Appearance

Other Typical Pheoll Products

Machine Screws, Tapping Screws, Cap Screws, Set Screws, Stove Bolts, Machine Bolts, Machine Screw Nuts, Phillips Recessed Head Screws and Bolts, Sems (Lock Washer Screws), Special Cold Headed and Threaded Products.

Use of Pheoll standard and special wood screws reduces overall assembly time and provides the means for joining parts tighter and stronger. Also, they improve the final appearance of your products.

These quality screws are made from cold forged blanks—individually turned, providing clean cutting edges free from nicks and burrs. The sharp gimlet-type point penetrates the wood for a straight and rapid driving start. Spiral threads seat firmly in the wood, providing a rigid bond that resists strain and vibration. Pheoll wood screws are available in slotted or Phillips recessed head types—in a broad range of sizes—all head styles, different metals and in all finishes. Ample stocks of steel and brass wood screws are always carried in stock.

Pheoll SCREWS • BOLTS • NUTS MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
Industrial Fasteners and Holding Devices

BREVITY—Identify by IEN - 7863 if you write the maker

LANSING, MICHIGAN

LANSING CO.
LANCO MATERIAL HANDLING EQUIPMENT

BREVITY—Identify by IEN - 7864 if you write the maker

DON'T WAIT 'TIL TOO LATE

Clean plants get those important defense jobs. Get your plant cleaned up now. A week or month from now may be too late.

Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

BREVITY—Identify by IEN - 7865 if you write the maker

A "SANDWICH" of synthetic rubber between two aluminum members of an airplane part is here fastened by a Bostitch Metal Stitcher.

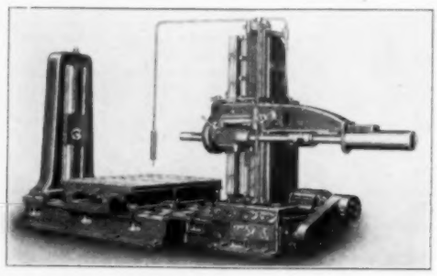
Save time, work, money by using Bostitch Metal Stitchers to fasten aluminum, copper, plastics, cold rolled steel, or similar materials in any combination. These stitchers often cut assembly time 50% to 90%. They frequently replace cementing, spot welding, riveting, or bolting. Write now for new booklet telling the story of Metal Stitching. BOSTITCH, 466 Mechanic St., Westerly, Rhode Island.

BOSTITCH® fastens it better AND FASTER with wire — ALL TYPES OF MACHINES FOR APPLYING STAPLES — ALL TYPES OF STAPLES APPLIED BY MACHINES

BREVITY—Identify by IEN - 7866 if you write the maker

BORING . . Horizontal machine, 4 or 5 in. spindle, also mills, drills

Source: BULLARD CO.
284-88 Canfield Ave., Bridgeport 2, Conn.



Four bed-ways under the saddle, non-metallic bearing surfaces riding these ways, pre-loaded roller bearing spindle with a 400-lb. bull gear to provide flywheel effect, lubrication of a type best suited for each set of elements, speed and feed-gear boxes assembled as self-contained units, main drive equipped with hydro-dynamic coupling and a brake motor driving through multiple V-belt, all characterize the construction of this new horizontal boring machine. The main drive motor rates 25 hp., is in totally enclosed design.

There are 24 feeds for each speed in both the fast and slow gear positions of the spindle to provide a total of 48. Range is between 0.0002 and 1.550 in. per revolution. There are 24 speeds ranging from 8 to 1,000 rpm. on the 4-in. spindle machine. There are 24 also on the 5-in. machine ranging between 7 and 850 rpm.

Three bed lengths measure 72, 96 and 120 in. for overall machine lengths of about 205, 229 and 253 inches. Three table sizes range from 47 by 68 in. to 55 by 92 inches. Maximum distance from the top of the table to the center line of the spindle is 38, 50 and 62 inches. The saddle measures 86 and 108 in. front to back in two sizes. The company has published an illustrated folder providing detailed technical information.

BREVITY—Identify by IEN - 7867 if you write the maker

DRIVE . . Hydraulic oil, inhibited against oxidation, corrosion

Source: SHELL OIL CO.
50 W. 50th St., Room 4237, New York 20, N. Y.

Ask for booklet "Hydraulic Equipment"

The company announces new formulation for its Tellus hydraulic oil by inclusion of a new combination of inhibitors and an antifoaming agent. The latter provides freedom from foaming caused by inclusion of air or gases in the oil. The oil itself has excellent penetrating qualities and ability to maintain a film between rubbing surfaces. The film will not break when subjected to the considerable variation in temperature and pressure encountered in hydraulic equipment. Freedom from tendency to emulsify is characteristic.

The oil is recommended for charging hydraulic equipment. Viscosity is governed by the type of pump. It is suited for use in pressure or gravity circulating systems to lubricate anti-friction and sleeve-type bearings, as well as for the lubrication of anti-friction bearings employing an oil-bath method of lubricating. The lower viscosity grades are recommended to lubricate high-speed bearings with application by any of the conventional methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7868 if you write the maker

OPEN STEEL FLOORING

If you are planning a new building, or of modernizing old walking surfaces indoors or out, look into the advantages of open steel flooring . . . the versatile flooring. Now! New catalog illustrates and describes wide range of modern applications, its safety features, strength, simplicity of installation and maintenance. Send for a copy.

NEW FREE CATALOG
write today
OPEN STEEL FLOORING INSTITUTE
23118 First National Bank Building
Pittsburgh 22, Pa.

MEMBERS

These Manufacturers assure top quality grating.

WALTER BATES CO., INC. Joliet, Illinois
THE TRI-LOK COMPANY Pittsburgh, Pa.
BLAW-KNOX COMPANY Pittsburgh, Pa.
BORDEN METAL PRODUCTS CO. Elizabeth, N.J.
HENDRICK MANUFACTURING CO. Carbondale, Pa.
IRVING SUBWAY GRATING CO., INC. Long Island City, N.Y.
STANDARD STEEL SPRING CO., Gary, Indiana

BREVITY—Identify by IEN - 7869 if you write the maker

Do you have a coating problem?

POTDEVIN

COATING MACHINES

will solve it...efficiently and at lower cost!

Illustrated is Model 46R for applying various types of coating materials.

There is a POTDEVIN for a tremendous variety of coating jobs . . . from 6 inch wide label pasters to large 46 inch coating machines for mass production. Wider machines available for sheet or roll coating.

Such coating materials as hot or cold glues, latex, resins, paint, varnish and lacquer, as well as many of the new type coating materials work with equal efficiency. The amount of coating is accurately controlled. No skilled help needed to operate a POTDEVIN. Write for full particulars. Our engineers are always ready to help you solve any coating problem.

POTDEVIN MACHINE CO.
1213 38th St., Brooklyn 18, N. Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling. POTDEVIN

BREVITY—Identify by IEN - 7870 if you write the maker

Need PRECISION Potentiometers?
Need SPECIAL Designs?
Need Potentiometer "KNOW-HOW"?

call Helipot

World's largest manufacturer of precision potentiometers!

HELIPOT offers a unique combination of unequalled "know-how", advanced manufacturing facilities and experienced personnel for solving *your particular* problems in the application of precision potentiometers to modern electronic circuits.

Suppliers to both Government and industry, HELIPOT has developed high speed winding, assembling and testing equipment that combine custom-built precision with mass-production economies. Multiple and single-turn designs . . . single and double shaft extensions . . . ganged assemblies . . . custom-spaced taps . . . multi-turn dials . . . *these and many other special features are part of the daily output at* HELIPOT!

If you have a problem requiring precision potentiometers, bring it to HELIPOT Corporation—*world leader in its field*. A call or letter outlining your problem will receive immediate attention!

A Typical Example . . . This 10-Turn, Model "A" HELIPOT provides a 46° slide wire in only 1½" dia. panel space. Resistance ranges—10 to 300,000 ohms, power rating, 5 watts. Can be ganged with multiple units per shaft . . . supplied with custom-spaced taps . . . and other special features.

Adaptable to a wide range of applications in experimental, military, industrial and educational fields. Write for data!

REPRESENTATIVES IN ALL PRINCIPAL CITIES
Export Agent: Frathom Co., New York 18, N. Y.

THE Helipot CORPORATION • SOUTH PASADENA 12 • CALIF.

BREVITY—Identify by IEN - 7871 if you write the maker

Boost Output with MEAD

WORK FEEDERS

Feed Work Fast to Drill or Tap!

As-fast-as-you-can-step-on-a-button the sensational new Mead pneumatic WORKFEEDER delivers, holds, ejects small parts to be drilled, reamed or tapped. Accommodates stampings, castings, screw machine parts, etc. Adjustable to sizes up to 3". Foot automatic control; operator's left hand is free to keep hopper loaded. Write for new Mead AIR POWER Catalog describing "Mead Family" of air operated fixtures and devices.

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-81, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 7872 if you write the maker

Link-Belt CAR SPOTTER

releases manpower for other jobs

Speed spotting of cars for loading and unloading . . . reduce switching and demurrage costs to a minimum. One man with two or three turns of rope around the motor-driven capstan controls movement of up to six railroad cars. Stationary or portable. Integral or separate 5 or 10 hp motors develop 5,000 and 10,000 lb. rope pull.

Link-Belt offers a complete line of car spotters . . . also specialties in drum type puller applications.

WRITE TODAY
For 16 Page Bulletin 1992-A

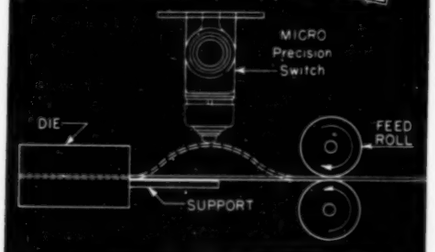
LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

BREVITY—Identify by IEN - 7873 if you write the maker

READ "MICRO TIPS"

for live Production Ideas!

An automatic stop for automatic punch press operation uses a snap-action switch to stop the press if stock fails to progress into the die and loops up.



Bring that old equipment back to life with a new automatic control, a new safety limit or a new protective warning device.

That's the way thousands of plant production men are using MICRO snap-action switches to lower production costs in every phase of industry.

"MICRO TIPS" . . . free to you . . . is full of practical time-tested ideas for making present equipment more automatic and for protecting equipment, products and personnel by the use of MICRO products.

Write today and receive "MICRO TIPS" regularly. You'll be glad you did.

MICRO SWITCH Distributors are located in over 100 cities to serve you. Look in your phone book.

MICRO SWITCH
FREEPORT, ILLINOIS
A Division of Minneapolis-Honeywell Regulator Company

BREVITY—Identify by IEN - 7875 if you write the maker

HEATING . . Induction equipment for soldering, brazing, heat treating

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Type HM-20L is a new electronic induction heater rating 20 kw. at an operating frequency of about 530 kc. The machine is available for operation on 220, 440, or 550-volt three-phase 60-cycle ac. Input rating is 40 kw. at 90 per cent power factor, plus 4 kw. required from a single-phase source. Overall dimensions of the assembly shown in the illustration are 44 in. in width, 90 in. front to back, 82 in. in greatest height. The table top measures 36 in. from the front to the face of the main housing.

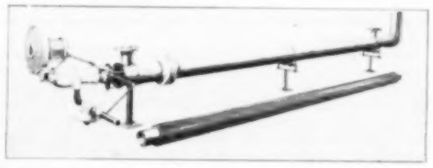
Assembly is in a totally-enclosed steel cabinet equipped with felt-gasketed and bolted doors to keep out oil vapors and dirt. The assembly is certified to meet FCC regulations. Blowers recirculate air within the enclosure in addition to a flow of cooling water for the oscillator tube and tank circuit assembly.

Type HM-20LI is recommended for short-run production. It is provided with variable power adjustment by means of a rheostat. Type HM-20L2 is intended primarily for long-run non-changing production. For this purpose the equipment is set initially to heat a specific part and no further adjustment is required. Weight is about 3,000 pounds. Illustrated details are in new 4-page bulletin GEA-5594.

BREVITY—Identify by IEN - 7876 if you write the maker

HEATING . . Direct fired exchanger for air, gas, liquids to 1,600 deg. F.

Source: BROWN FINTUBE CO.
158-62 Filbert St., Elyria, Ohio



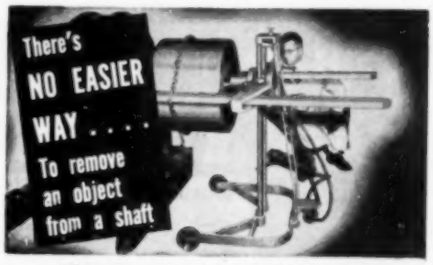
A section of the company's integrally-finned Inconel tube is employed as the combustion chamber inside a stainless steel outer shell in this new direct-fired heater. A gas or oil burner, with the required accessory equipment, fires into the tube. Products of combustion pass through to the opposite end to exhaust from a stack connection.

Side connections near the two ends permit introduction of air, gas, liquids to the annular space between the inner tube and the outer shell for flow from one end to the outlet at the other without contacting the products of combustion.

Applications include heating air to dry chemicals, dehydrate foods, dry lumber, anneal glass and for high-temperature supply to preheating furnaces, jet turbine testing. Each assembly is built to order for given requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7877 if you write the maker



The New, Improved Hydraulic

PULLEY PULLER

Enables one man to remove a pulley, gear, pinion, or other object from a shaft in minutes! No crow bars, sledges, or blow torches. No damage. Puller is adjustable, easily moved, rugged. Hundreds now in use in industry.

5-ton size **$62.50**
★
20-ton size **$290.00**
★
50-ton size **$655.00**
(F.O.B. Factory)

Write for complete information — Catalog A

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

BREVITY—Identify by IEN - 7878 if you write the maker

you save 50%

in TANK HEATING and COOLING with

PLATECOIL

(REPLACE PIPE COILS)

- ★ **You SAVE 50% in tank SPACE**
- ★ **You SAVE up to 50% in initial COST**
- ★ **You have 50% LESS WEIGHT to handle**
- ★ **You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution**

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

BREVITY—Identify by IEN - 7879 if you write the maker

FOX "Powerchargers" Get Complete Circuit Protection with — **KLIXON CIRCUIT BREAKERS**

Fox "Powercharger" battery chargers make charging automatic, fast, foolproof and trouble free. To protect circuits and batteries, Fox engineers incorporate two Klixon Circuit Breakers into the "Powercharger." The reason, their experience proves that Klixon Breakers can be depended upon to provide positive protection for the full life of the unit. Should the clamps be reversed, shorts occur or if the current is too high, the Klixon Circuit Breakers cut "off" the power and a red light flashes "on", thus preventing possible damage to charger or batteries.

Regardless of the type of electrical equipment you manufacture, it will pay you to use Klixon Circuit Breakers in your products.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
208 FOREST STREET, ATTLEBORO, MASS.

KLIXON

BREVITY—Identify by IEN - 7880 if you write the maker

Amazing New 3/4 Ton HOIST and PULLER!

BLACKBURN *Jiffy Lift*

30 DAY FREE TRIAL

Hundreds of Uses

Hoist weighs only 12 lbs., yet has 3/4 ton capacity. Single control for up and down. Quick action, ratchet type. Factory-tested. $45.00, F.O.B. St. Louis. Try it a month FREE!

MAIL COUPON TODAY

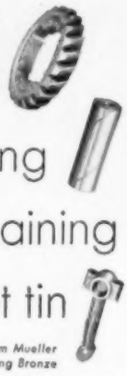
JASPER BLACKBURN CORPORATION
35 Madison St., St. Louis 6, Mo.

☐ Send us full information about "Jiffy Lift".
☐ Send us one "Jiffy Lift" for 30 Day FREE TRIAL.

Your Name and Title _____
Firm _____
Address _____
City and State _____ IEN

BREVITY—Identify by IEN - 7881 if you write the maker

MUELLER BRASS CO.



600 series
a better bearing
bronze containing
no hard-to-get tin

Four typical parts forged from Mueller Brass Co. "600" series Bearing Bronze

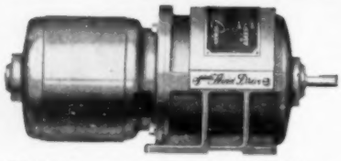
If you use gears, connecting rods or other parts of bearing metal in your products, it will pay you to investigate Mueller Brass Co. "600" series, a forgeable bronze that **contains no critical tin.** This bearing metal outperforms phosphor bronze and other bearing metals and will save you money in your applications. "600" series alloys can be forged into relatively complicated shapes . . . have low coefficient of friction . . . high resistance to corrosion and a tensile strength 2½ times greater than cast phosphor bronzes. There is a "600" series alloy with the properties to fit your bearing metal needs . . . write today for further facts.

MUELLER BRASS CO. PORT HURON 27, MICHIGAN

BREVITY—Identify by IEN - 7882 if you write the maker

Take advantage of this

FREE TRIAL OFFER



We invite you to try an American Blower Type TM Gyrol Fluid Drive in actual production on your own machines.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, overload protection, and absorb shocks. No obligation . . . no cost to you.

Write us direct. Describe the machine on which you want to use the TM unit. Give horsepower of present motor. We'll contact you to arrange installation and trial period.

AMERICAN·BLOWER

American Blower Corporation, Detroit 32, Michigan

Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 7883 if you write the maker

DEEP DRAWN

TO GIVE YOUR PRODUCT GREATER STRENGTH

A typical Hackney Deep Drawn Shell is this Seamless Shell for a dry chemical fire extinguisher unit, 7½" in dia., 21" high.

Hackney Deep Drawn Shapes and Parts are strong and smooth because they are shaped under pressure from one piece of sheet metal. Not only that, Hackney Deep Drawn Shapes and Shells can be produced faster at lower cost, with less weight and better appearance. Hackney Engineers have almost 50 years of specialized experience in working many metals and alloys into a wide variety of shapes and capacities. They will be glad to assist you in adapting special shapes that will improve existing products or develop new products. Write us for full information.

Hackney **PRESSED STEEL TANK COMPANY**
Manufacturer of Hackney Products

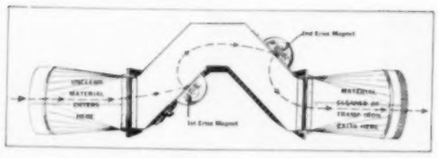
1449 S. 66th St., Milwaukee 14 • 1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N. W., Rm. 135, Atlanta 3
208 S. La Salle St., Rm. 786, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 14

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

BREVITY—Identify by IEN - 7884 if you write the maker

SEPARATING . . Permanent magnet unit removes tramp iron from flow in duct

Source: ERIEZ MFG. CO.
1303 E. 12th St., Erie, Pa.



New design of the company's hump-type magnetic separator employs a section of duct and two of its permanent magnets to remove tramp iron from materials carried through the duct in an air stream. Baffles, not shown in the illustration, direct the flow first at one magnet on a lower face and then at a second magnet on the upper face prior to exit at the outlet side.

Both magnets are enclosed in aluminum housings and are mounted on hinged aluminum plates so they can be swung back from the duct for cleaning at intervals. The complete assembly is available to specification for given materials to be handled and for handling capacity and dimensions.

BREVITY—Identify by IEN - 7885 if you write the maker

COUNTING . . Electronic equipment for speed to 6,000 counts per minute

Source: BERKELEY SCIENTIFIC CO.
2202 Wright Ave., Richmond, Calif.

Model 10 is a new assembly of one of the company's plug-in electronic decade units, previously described IEN - 8492 - 49, an electronic plug-in relay, a mechanical register and the required switches, reset buttons, power and signal input and output connections. The decade unit counts up to 10, at which point the first of the six wheels in the register rotates to read 1. Thus the assembly acts as a 7-digit counter.

Any occurrence, mechanical, optical or electrical, that can be converted to electrical impulses can be counted. Counts are accepted when the actuating switch is in "count" position. The unit is put in stand-by position when this switch is moved down. The total count will remain displayed until a reset button is pressed and the register thumb wheel rotated to bring the wheels back to zero.

BREVITY—Identify by IEN - 7886 if you write the maker

CASTINGS . . Technical reprint on centrifugal casting of heat-resistant steels

Lebanon Steel Foundry
1st Ave. & Leaman St., Lebanon, Pa.

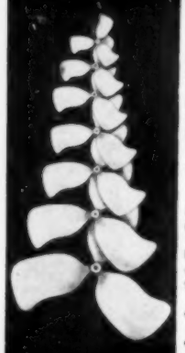
Characteristics, design factors and applications are described for symmetrical-shape castings in new 8-page reprint bulletin, "Centrifugal Casting in Permanent Molds." Tables list the types of steels that can be cast, drawings show how blanks can be machined, pictures show the shapes produced.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7887 if you write the maker

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

SEVEN SIZES

Kloppenborg Fan Blades are made in 7 sizes from 12" to 24" and are rated at 1750 RPM to deliver from 1225 to 8165 CFM. They are machine bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

DO 97 orders will receive special consideration.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

BREVITY—Identify by IEN - 7888 if you write the maker

NEW TITCOMB SEGMENTAL CHUCK SLASHES GRINDING COSTS

Check the many advantages of this revolutionary new chuck when it is used in combination with tried and proved Robertson Segments . . .

LOW COST. Novel design of segment gives the lowest cost per cubic inch of usable abrasive. By actual grinding tests, three to four inches of metal are removed for every inch of abrasive loss.

FASTER CUTTING. Unique design produces a plowing action. This, plus centrifugal force, sweeps chips and dirt from the work surface.

CONTINUOUS CUTTING. Overlapping segments assure continuous cutting . . . leave plenty of space for chip clearance.

LESS WASTE. Clamping device with safety wedge action and integral segment adjusting plate reduces segment waste. No special skill is required to load the holders.

SIMPLIFIES BUYING. Regardless of the size of the chuck, one size segment covers all vertical spindle surface grinding requirements.

If you are now using Robertson Wheels or Segments, you know you can count on them for top performance. Even so, you will be surprised at the greater production with less cost that this new chuck can give you. If you are one of the few who have yet to experience the tremendously increased output that comes from using Robertson abrasive products, then you owe it to yourself to investigate the possibilities which this new combination offers you. Let a Robertson engineer show you—right in your own plant—on your own equipment. Write on your business letterhead for a demonstration.

Today, some of the country's largest manufacturers are using Robertson Wheels and Robertson engineering services.

ROBERTSON
MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY

Resin-Bonded and Vitrified-Bonded Grinding Wheels • Mounted Wheels • Segments

BREVITY—Identify by IEN - 7889 if you write the maker

PRE-MEASURED . . . factory marked in red at ten-foot intervals enables stockman to give out the exact length, keep accurate record with no fumbling—no delaying. Convenient—economical—sure—it's a feature that can't be beat.

CARTONIZED . . . Easy to handle, no bands to cut, no covers to remove. Just open, pull out the rope and cut. Coils stay clean, don't collapse . . . cartons can be stacked ceiling high. Just another feature your stockman will like . . . another feature that means *real* economy.

NEW BEDFORD ROPE . . . tops in quality, available at **no extra cost** in pre-measured Manila or Sisal. Packed in easy-to-dispense cartons . . . half or full coils.

Send for FREE reference chart on specifications for New Bedford Manila, Sisal and Nylon Rope.

NEW BEDFORD CORDAGE CO.
New Bedford, Mass.

BREVITY—Identify by IEN - 7890 if you write the maker

TIMING EQUIPMENT

CONTROLS VARIABLE DURATION OF A PROCESS CYCLE

This self-contained timer automatically starts or stops a process cycle after a predetermined lapse of time. It is available in four ranges maximum at 5, 15, 50 minutes, and 5 hours.

Two mechanism designs include Model 308-R to break the control circuit at the end of a timing period and Model 308-B to break one circuit and make another at the end of the period.

Contact rating is 500 watts at 110 or 220-volt ac. List price is $36 for Model 308-R, $40 for Model 308-B.

Construction includes a synchronous driving motor, magnetic clutch, interval-setting knob and dial, in a metal housing with black ripple finish. The housing is made with knock-out openings for wiring and is available with a glass-covered dial.

Bulletin 770 provides design and operating details and includes circuit diagrams

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

BREVITY—Identify by IEN - 7891 if you write the maker

Clamp Most Anything WITH "Aero-Seal"

WORM-DRIVE CLAMPS

- Hold odd-shaped connections
- Hold multiple pipes or ducts
- Conforms to any shape
- No distortion — no crimping
- Vibration proof . . . no parts to lose or loosen
- Use again and again
- Made in any length
- All stainless steel bands at no extra cost

ANOTHER BREEZE MARK PRODUCT

WRITE TODAY FOR FREE SAMPLE!

"Aero-Seal" HOSE CLAMPS

AERO-SEAL Worm Drive Never Works Loose

BREEZE CORPORATIONS, INC.
32 South Sixth Street Newark, N. J.

BREVITY—Identify by IEN - 7892 if you write the maker

SPEED UP CLEANING, POLISHING, FINISHING OPERATIONS

Pangborn

Hydro-Finish is versatile! Use it to speed up cleaning, polishing and finishing of molds and dies as well as production line work.

Hydro-Finish saves you time, labor and money. Scale and discoloration are removed in *minutes* instead of hours. Cleaned surfaces are virtually free of directional grinding lines. Costly hand work is greatly reduced. No danger of excessive metal removal because tolerances are held to .0001". Fine mesh abrasives suspended in water do a precision job.

Find out how Pangborn Hydro-Finish improves product quality, increases tool and die life! For full details, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

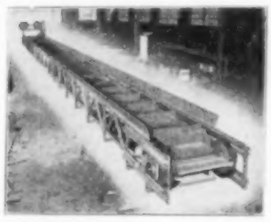
Pangborn

BLAST CLEANS CHEAPER with the right equipment for every job

BREVITY—Identify by IEN - 7894 if you write the maker

CONVEYING . . Heavy duty flight unit for handling coal, gravel, rock, slag

Source: BONDED SCALE & MACHINE CO. 50 Bellview, Columbus 7, Ohio



Steel flights in this new Model-FL heavy-duty conveyor are bolted to fittings secured to the driving chains on the two sides. The chains ride over sprockets mounted on ball-bearing shafts. Its motor or engine drive is at the head end. A take-up is at the tail end. The flight moves materials over a welded-steel load-carrying pan equipped with guards on the two sides to form a material trough inside the welded structural steel frame. Bottom discharge gates can be built into the pan. High flared sides minimize spillage.

Flight sizes range from 12 to 24 in. in width and from 2 to 8 in. in height. A conveyor with 12 by 2-in. flights will handle 20 ton per hour of coal along a horizontal run or up a 30-deg. incline with operation at 100 fpm. The conveyor is available to specification for given materials, lengths, widths, capacity.

BREVITY—Identify by IEN - 7895 if you write the maker

PLASTIC . . Surface hardening liquid for application on polyester laminates

Source: BEE CHEMICAL CO. 13797 South Ave. "O", Chicago 33, Ill.

Test panels on request

Logoset trade names new liquid material for surface application on polyester laminates. It develops a protective finish essentially permanent and resistant to salt spray, sunlight, heat, weathering. The material is a further development in the company's line of coatings for plastics, previously described IEN-5046-49, under the trade name Logoquant.

BREVITY—Identify by IEN - 7896 if you write the maker

THERMOMETER . . General purpose unit assembles removably in stainless case

Source: WESTON ELECTRICAL INSTRUMENT CORP. 641 Frelinghuysen Ave., Newark 5, N. J.

Tag Model 8689 is a new thermometer available in five ranges within overall between minus 40 and plus 400 deg. F. The thermometer and its mounting plate assembles removably in a formed stainless-steel case. A suspending ring at the top completes the unit. Features are resistance to corrosion, design for general-purpose application, provision for replacement of the thermometer in the case if it becomes damaged.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7897 if you write the maker

NO MORE GUESSWORK!

PROCESS TIMING automatically recorded by a Little "TIME CLOCK"

"The cure must be 8½ minutes"—"the heat must be applied exactly 15 minutes"—"the plating must take just 2 minutes"—"the pigment must be mixed just 12 minutes"—etc.

The Servis Recorder checks on this—it records just what happened—it "times the process." You are no longer in the dark; from now on you know all day and every day whether your process timing is lived up to—or if somebody slipped—if something went wrong to ruin your product for that afternoon, or that whole shift! Write for Process Timing Catalog. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

Bolt this 2 lb. Recorder right to the machine itself. Let the "Process" record itself on the chart—(No ink, no pencil, no wires; the record is recorded in wax).

The Servis Recorder
The Time Clock for Machinery

BREVITY—Identify by IEN - 7898 if you write the maker

FULL ELECTRICAL PROTECTION for Industrial Electrical Service

in these ratings				
Type	Volts	Amps	Kva Int. Cap.	Send for Bulletin
E-145	2,500	400	15,000	7186021A
E- 47	4,160	600	25,000	7186342B
D- 20	4,160	1200	50,000	7186023C
D- 20	7,200	600	50,000	7186023C
DZ- 40	7,200	600 1200 2000	100,000	7186179C
DZ- 60	13,800	600 1200	150,000	7186129D
DZ-100	13,800	1200	250,000	7186129D
DZ-200	13,800	1200 2000	500,000	7186129D

ALLIS-CHALMERS OIL CIRCUIT BREAKERS

ASK YOUR ELECTRIC POWER UTILITY about Allis-Chalmers circuit breakers. Get proof of their reliability, economy and adaptability to many operating conditions. Breakers have simple mechanism and contact design . . . a variety of accessories for automatic and manual tripping and closing.

Over 50 years of power circuit breakers (air or oil). Ratings 2500 to 230,000 volts and 15,000 to 10,000,000 kva interrupting capacity for industry and power utilities. For complete information on the breaker to fit your requirements write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-2364

ALLIS-CHALMERS

BREVITY—Identify by IEN - 7899 if you write the maker

NEW JACK LOCATES ON ANCHOR BOLT

Empco JACK STYLE JS

- SELF-ALIGNS TO UNEVEN FLOOR
- EASILY LIFTS 8,000 LBS.
- SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
- VI-SORB MOUNTING PADS ABSORB VIBRATION

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.
Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.
Available in three sizes: 1¾", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO "PRODUCT"

THE ENTERPRISE MACHINE PARTS CORPORATION
2727 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 7900 if you write the maker

Have You The Latest Story on Laminated Plastics FABRICATION?

Take our type of laminated plastics as an example. Do you know which grades of Synthane to select for a punching operation? Do you know how a saw blade should be dressed for best results on Synthane? Or what tolerances to specify for press or slip fits?

It's easy to get the answer to these and other questions about fabricating and designing for Synthane laminated plastics. Send the coupon below for the Synthane Machining Folder.

Sheets
Rods
Tubes
Molded Laminated
Molded Macerated
Fabricated Parts

SYNTHANE

SYNTHANE CORPORATION
South River Road
OAKS, PENNSYLVANIA

Gentlemen:
Please send me the Synthane Machining Folder.
Name_____
Firm name_____
Address_____
City_____ Zone____ State_____

BREVITY—Identify by IEN - 7901 if you write the maker

Saves $40,000 a year

with General Electric Capacitors

A West Coast chemical plant reports that 3780-kvar of G-E capacitors, engineered into the plant's power distribution system, are saving $40,000 on power costs alone. That's a return of better than 50% a year on the investment!

Have you checked your power costs recently? If you have a power factor or demand clause in your power contract you, too, may be able to effect considerable savings. Your authorized G-E agent or distributor, or nearest G-E sales office, can help you check. Or write for GEA-5167—"A Way to Cut Power Costs." *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

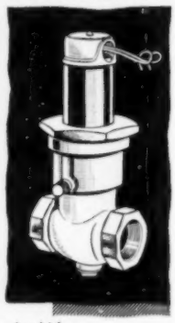
GENERAL ELECTRIC

407-200

BREVITY—Identify by IEN - 7902 if you write the maker

ATKOMATIC EXTRA RUGGED

ELECTRICALLY OPERATED VALVES



In thousands of installations . . . in this and other countries . . . Atkomatic Valves continue to give years of dependable, trouble-free service. That's because they are *extra rugged*—built to take more than you will demand. Compact and simple, they are made for pressures of one to 3,000 pounds. In your plant or on your product, you can count on ATKOMATIC. Send us your individual problem . . . maybe we've already solved it!

ATKOMATIC VALVE COMPANY, INC.
545 W. ABBOTT STREET, INDIANAPOLIS, INDIANA

Send For Literature

BREVITY—Identify by IEN - 7903 if you write the maker

GREATER VERSATILITY

ROCKWOOD
TRIPLE ACTION
SG-48
WaterFOG NOZZLE

Discharges:
1. High Velocity WaterFOG
2. Straight Stream
3. Low Velocity WaterFOG

Will out-perform any other fog nozzle operating on either high or low pressures for all around fire fighting purposes. Extinguishes fires in flammable liquids and ordinary combustibles faster and with less water. Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments, etc. Operates efficiently on 50 p.s.i. at the nozzle.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

Write for bulletin C-501R

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 7904 if you write the maker

WOODWORKING . . Screw hole drill for use in wood assembly operation

Source: D. R. CARNER CO.
200 Hospital St., Providence 3, R. I.

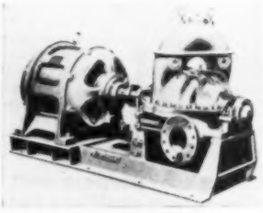
Screw-Mate trade names a new combination of taper drill, straight drill and countersink, with a counterbore section if required, to produce holes in wood parts ready to take wood screws. The drill can be operated by an inexperienced worker since the driving head limits penetration. The taper back from the point, the straight section and the countersunk portion for the screw head are all produced in proper size and relation to each other.

Variation of the design shown includes a straight section back of the countersunk shoulder for screws that are to be set into an assembly and covered by a plug. Drill sizes range from No. 5 to No. 14 and in specific units from ½ in. in length to 2½ inches. Drills that are going to be used for screws to be followed with a plug over the screw head have a straight section equal in length to the head diameter. Individual list price ranges from 75 cents to $1.

BREVITY—Identify by IEN - 7905 if you write the maker

PUMP . . Two stage centrifugal, 2 to 10 in. discharge, to 4,000 gpm.

Source: ECONOMY PUMPS INC.
1000 Laurel Ave., Dept. 33-C, Hamilton, Ohio



Hydraulic balance is obtained in this recently improved two-stage pump by mounting the two impellers back to back. The impellers are assembled on a shaft mounted in double-row ball bearings and protected by sleeves where it passes through the stuffing box on each side. The sleeves are held in place with nuts threaded on the shaft outside of the stuffing boxes.

Interstage pieces in the assembly are bronze or bronze bushed. Stuffing glands are split bronze with swing bolts. Metal fingers shield the bearings against moisture traveling along the shaft. At the outboard end an angular-contact duplex ball bearing takes thrust as well as radial load.

The pump is built in seven sizes from 3-in. suction and 2-in. discharge to 10-in. suction and 10-in. discharge. Capacities are to 4,000 gpm. with heads to 750 feet. Illustrated detail with a sectional view of the pump and dimension data are presented in 4-page Catalog C-351.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
SEE OUR SUGGESTIONS AT THE INDEX, PAGE 102

BREVITY—Identify by IEN - 7906 if you write the maker

Make your *Eye Safety Program* a real success!

Supply WATCHEMOKET eye SAVERS

Insure the success of your eye safety program by supplying goggles that workers will actually wear! The light, comfortable fit and good looks of Eye-saver plastic goggles make them popular with workers everywhere. Available from your safety supplier in many different styles to meet all eye hazards. Tuc-Away model (illustrated) features "telescoping" temples with frame fashioned for "change-around" lens plan.

FREE! *Send for magazine article giving impartial advice on best uses of plastic eye protection. Eye-Savers catalog also included.*

WATCHEMOKET OPTICAL CO., INC.
DEPT. 7, PROVIDENCE • RHODE ISLAND
Producers and Originators of Practical Plastic Eye Protection

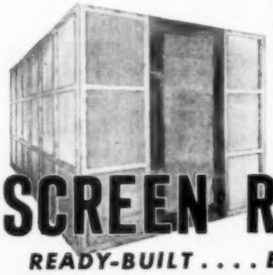
BREVITY—Identify by IEN - 7907 if you write the maker

We don't have to teach our people how to use this extinguisher!

No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to

RANDOLPH LABORATORIES, INC.
6 E. Kinzie St.
Chicago 11, Ill.

BREVITY—Identify by IEN - 7908 if you write the maker



✓ Attenuation as high as 100 db. from 0.15 to 10,000 mc. (higher attenuations with special design).

SCREEN ROOMS

READY-BUILT . . . . ELIMINATE RADIO INTERFERENCE INFLUENCE

Designed to rigid laboratory standards and supplied in pre-built form for installation in a few hours, ACE SCREEN ROOMS are available in sizes for practically every application. Shielding characteristics have been determined and approved by leading laboratories. Ideal for production, testing, research and development, or shielding applications at radio frequencies.

✓ Used and approved for maximum radio interference suppression and r-f shielding uses.

SHIELDED ACE ROOMS PHILA. PA.

Write, wire or 'phone for details.

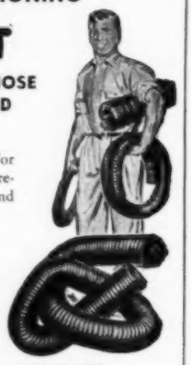
ACE ENGINEERING & MACHINE CO., INC.
3644 N. Lawrence St.
Philadelphia 40, Pa. REgent 9-1019

BREVITY—Identify by IEN - 7909 if you write the maker

FOR VENTILATION
FUME & DUST CONTROL
AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE
LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proven suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL — EFFICENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.
Various Flexaust types, accessories, and other hose types also available:

BLOFLEX
Non-reinforced collapsible hose

PORTOVENT
Ring-reinforced retractable hose

Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. IE-8, 15 Park Row, New York 38, N. Y.
Plant: Amesbury, Mass.

BREVITY—Identify by IEN - 7910 if you write the maker

SURE CURE FOR METAL SHORTAGES

Here is a practical way to avoid delays in production due to metal shortages. Substitute plastics for items like nameplates which can be fabricated advantageously to your exact specifications.

Sillcocks-Miller specialists offer the experience and facilities to develop and produce quality nameplates and other parts for which plastics are a practical substitute material.

It will pay you to write for details or submit specifications for quotation.

The SILLCOCKS-MILLER Company

Pioneers in Plastic Fabrication since 1910

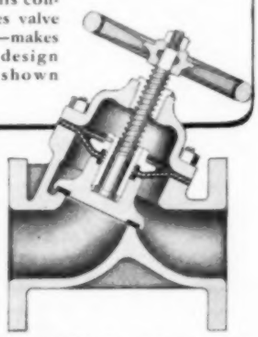
23 W. Parker Ave., Maplewood N. J.

BREVITY—Identify by IEN - 7911 if you write the maker

why CRANE diaphragm valves

- ***are safer,***
- ***more durable,***
- ***more efficient***

The basic superiority of Crane Diaphragm Valves stems from their unique seating arrangement. Note that the disc and diaphragm are separate. This construction increases valve life and efficiency—makes possible other design improvements shown below.



No. 1611, Flanged; Working Pressures: 150 lbs. water, oil, air, or gas; ½ to 4-in. sizes. 125 lbs. water, oil, air, or gas; 6-in. size only. 180° F. Max. Temp.; all sizes.

LONGER DIAPHRAGM SERVICE LIFE—Diaphragm is used *only* to seal bonnet—not for seating purposes. No chance for cutting, crushing, and rapid wear.

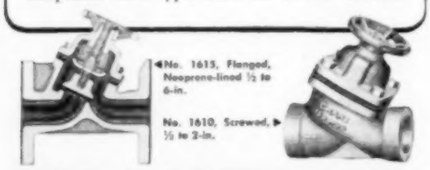
POSITIVE SHUT-OFF OF FLOW—Separate disc and diaphragm design permits tight closure even should diaphragm fail.

TIGHT SEATING—Durable and resilient insert, in face of disc holder, closes tightly against seating surface in body.

GREATER FLOW CAPACITY—Y-pattern body design offers low resistance to flow, reduces pressure drop to a minimum.

EASIER OPERATION—Less torque required to close valves, even in larger sizes and at higher pressures. Fewer turns needed to operate.

SUITED TO MANY SERVICES—Unlined iron body valves recommended for all common services; neoprene-lined valves highly suited to fluids corrosive to iron but non-active chemically upon neoprene. Both types ideal for vacuum service.



◀No. 1615, Flanged, Neoprene-lined ½ to 6-in.

No. 1610, Screwed, ▶ ½ to 2-in.

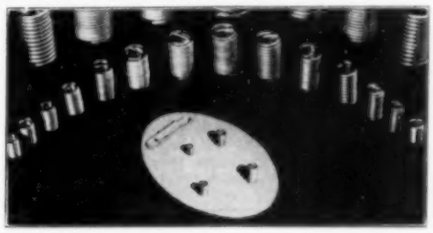
CRANE CO.

General Offices: 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

BREVITY—Identify by IEN - 7913 if you write the maker

FASTENINGS . . Steel thread insert for threaded fastenings in soft metals

Source: HELI-COIL CORP. 47-150 35th St., Long Island City 1, N. Y.



Four new sizes, smaller than those previously available, have been added to the company's line of stainless-steel helical-wire thread inserts. The new units are designed particularly for use in the housings of appliances such as sweepers, vacuum cleaners, sewing machines, adding machines, typewriters. They apply in holes threaded for the purpose in housings made of aluminum, magnesium, plastic, brass, wood as well as in iron and steel.

The insert presents a hard wearing surface for the threaded fastening that will not wear out on repeated application and removal of the fastening. It provides an anchor for the full length of the hole initially threaded in the housing. No. 8-36 and No. 6-40 are two of the sizes in the fine-thread series. No. 5-40 and No. 4-40 are the other sizes in the coarse-thread series. Each is available in length the same as the diameter, 1½ times the diameter and 2 times the diameter.

BREVITY—Identify by IEN - 7914 if you write the maker

TRUCK . . Engine driven fork design for safe use in gas filled areas

Source: YALE & TOWNE MFG. CO. 11002 Roosevelt Blvd., Philadelphia 15, Pa.

Special design explosion safe

The company announces availability to specification of its engine-driven fork truck in a spark-enclosed design for safe operation in atmospheres filled with gas or dust. The truck is protected by shielding the electrical equipment against sparking, by providing a water-type exhaust manifold, a water-cooled muffler and by using static conductive tires. The truck will not act as a source of ignition of any vapor due to electric sparking, hot metal surfaces, exhaust gas or backfire.

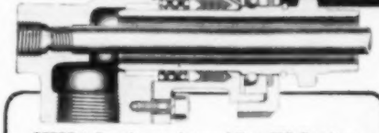
The fuel tank is welded and surrounded by structural members to protect it against rupture. A filler cap seals the opening and is shielded from the engine compartment so overflow cannot drop on the electrical equipment or any hot engine parts. Fuel lines are copper tube. The gasoline filter bowl is metal. Fuel lines are supported and located so gasoline will not drop on any hot surfaces if a leak does occur. An up-draft carburetor with a leak-tight metal air horn is connected to an air cleaner of back-fire-arrestor type. All low-tension wires and cables are enclosed in flexible nonmetallic tubing. High-tension wires are enclosed in flexible metal tubing that is grounded wherever the wires pass through metal surfaces. The spark plugs are enclosed. So also are the generator, starting motor and relays. An insulated cover applies over the battery terminals.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7915 if you write the maker

UP TO 50% *Power Savings*

The Improved BARCO REVOLVING JOINT



HERE is Barco's new, *improved* Type 1BR Revolving Joint for supplying steam, water, oil, or other fluids to rolls, dryers, drums.

LOW TORQUE! Inherent low torque little affected by pressure, speed or temperature—thanks to special ball bearing used in combination with self-lubricating graphite-carbon bearing and new low torque long-life chevron packing.

LEAKPROOF AND LONG LIFE! Note wide spacing between bearings. Insures close alignment and long life for self-adjusting, self-sealing chevron packing.

EASY SERVICING! Internal parts readily accessible—usually without removing joint from roll. Sizes ½" to 2". Single flow or syphon styles. Steam: 150 p.s.i., 450°F., 500 RPM. Hydraulic: 200 p.s.i., 750 RPM.

Send for new Bulletin 300

BARCO MANUFACTURING CO.

1838-I Winnemac Avenue • Chicago 40, Illinois

BREVITY—Identify by IEN - 7916 if you write the maker

Tell Us Your Production Problems . . . We'll Help You Solve Them

"LOGAN" AIR-DRAULIC® FEED-CONTROLLED CYLINDERS

Combines

the fast-acting, economical, low pressure operation of **AIR**

with the smooth, uniform controlled regulation of **OIL**

- Power Movements In Any Direction
- No Power Unit Required

5 STANDARD MOUNTING TYPES

- Standard bores from ¾" to 8". Any stroke to 5 ft. for air pressures to 150 p.s.i.

Furnished for controlled feed with rapid return in either direction, or with controlled feed in both directions. Skip feed movement can also be provided.

ILLUSTRATED AIR-DRAULIC CYLINDER WITH FLANGE MOUNTING AT ROD END

Logan Manufactures 6,975 Standard Cataloged Items

Free Catalog On Request

- AIR CONTROL VALVES CATALOG 100-4
- AIR CHUCKS CATALOG 70-5
- AIR CYLINDERS CATALOG 100-3
- AIR and HYDRAULIC PRESSES CATALOG 51
- COLLET GRIP TUBE FITTINGS CATALOG 44
- HYDRAULIC CONTROL VALVES CATALOG 200-4
- HYDRAULIC CYLINDERS CATALOG 300-2, ALSO 80-2
- HYDRAULIC POWER UNITS CATALOG 300-1
- SURE-FLOW COOLANT PUMPS CATALOG 60

Let Logan Engineers help you design your Air and Hydraulic Circuits

Logan *Air and Hydraulic Equipment*

LOGANSPORT MACHINE CO. INC. 812 Canton Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

BREVITY—Identify by IEN - 7917 if you write the maker

UP UP UP

Go Efficiency and Morale

Belt-Drive Exhaust Fans 24- to 48-inch

Direct-Drive Exhaust Fans 12- to 30-inch

. . . when you Fan-Plan with Emerson-Electric Exhaust Fans. Down go maintenance costs because these fans are built to give you more *service* with less *servicing*. For large-volume air movement now and for the years to come, specify Emerson-Electric Exhaust Fans.

For information about America's most complete line of direct- and belt-drive Exhaust Fans, Air Circulators, Ceiling Fans, and Oscillators—see your electrical contractor. Or write today for Bulletin No. 244.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

BREVITY—Identify by IEN - 7918 if you write the maker

4 TON
DEEP THROAT MODEL

Other models available

Write for free circulars.

benchmaster PUNCH PRESSES AND MILLERS

2952 West Pico Boulevard, Los Angeles 6, California

BREVITY—Identify by IEN - 7919 if you write the maker

MORE WORK between grinds with T-J CUTTERS

Less breakage... Lower Cost!

Your die costs go down . . . and you can raise the feed . . . using T-J Die Sinking Milling Cutters! Their advanced design helps you get utmost *accuracy, speed* and *efficiency* from your machine. T-J cutters made from a standard, extremely high grade steel . . . properly machined . . . scientifically heat-treated and accurately ground. They're *extra rugged* . . . hold a sharp edge longer . . . less breakage! Wide range of T-J standard styles and sizes. Send for new catalog 150. The Tomkins-Johnson Co., Jackson, Mich.

FOR TOUGH JOBS SPECIFY T-J

TOMKINS-JOHNSON
DIE SINKING MILLING CUTTERS

BREVITY—Identify by IEN - 7920 if you write the maker

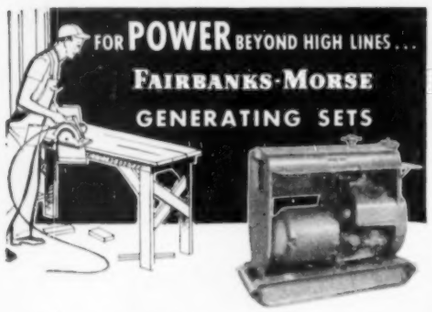
BEST FOR EVERY FOLDING CHAIR PURPOSE!

- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra-wide, extra-deep seats and backs
- CONVENIENT—fold quietly, quickly, compactly
- RUBBER SHOES—long-life, replaceable
- SEAT STYLES—formed plywood with durable lacquer finish; or vinyl-plastic upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR DESCRIPTIONS AND PRICES *American Seating Company*
Grand Rapids 2, Michigan
Branch Offices and Distributors in Principal Cities

BREVITY—Identify by IEN - 7921 if you write the maker



If you have a problem in power supply for a construction job; lighting an airfield or boat landing; power and light for a tourist court, summer camp or restaurant; lighting and heating country schools or churches; or for any other similar purpose, get the facts about dependable Fairbanks-Morse Generating Sets.

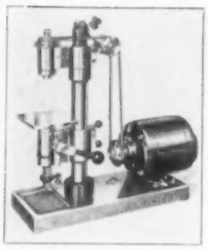
They are available in capacities from 600 to 35,000 watts, A.C. or D.C., and equipped with manual, remote or automatic starting devices. For details, see the Fairbanks-Morse dealer nearest you, or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

BREVITY—Identify by IEN - 7922 if you write the maker

DRILLING . . Sensitive machine to drive No. 80 or smaller drills

Source: LOUIS LEVIN & SON INC.
780-84 E. Pico Blvd., Dept. I, Los Angeles 21, Calif.



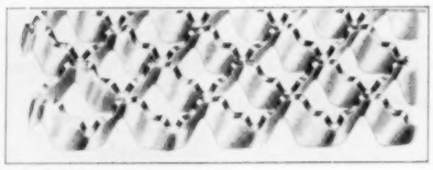
The spindle in this new machine is mounted on preloaded ball bearings and takes the company's Style-WW drill-holding collets. These are available in sizes from 0.1 mm. to 1.0 mm. in increments of 0.05 mm. and from 1.1 mm. to 7.0 mm. in increments of 0.1 mm. Hole depth for the drill shank is ¾ inch. The spindle is driven by a 1/20-hp. motor with belt and sheave connection for 3 speeds of 1,000, 1,725 and 3,000 rpm.

Work is positioned on a 3⅜ by 4-in. table mounted for vertical movement through 1½ in. from a maximum distance between table and spindle of 4 inches. The rack and pinion feed is sufficiently sensitive so the operator can feel the smallest drill cutting. An adjustable stop on the rack limits the stroke and a guide pin prevents rotating movement. List price for the machine is $234. Collets list at $3.60 to $7.80 each, depending on size.

BREVITY—Identify by IEN - 7923 if you write the maker

FLOORS . . Formed steel grating made of 1⅛ by 1¼ in. steel stock

Source: BUSTIN IRON WORKS INC.
110 E. 130th St., 2nd Floor, New York 35, N. Y.



Firm Grip designates new formed-steel grating in which an assembly is based upon formed strip in lengths to 16 ft., 5 in. for weld or bolted assembly to cover a specified area. Three styles include large and small serrations on the two edges, small serrations on both edges or one edge serrated and the other one plain. In the latter case strip height is ½ in. to the tips of the serrations. The company is prepared to fabricate platforms, ramps, running boards, stair treads, decks, machine treadles for specified uses.

BREVITY—Identify by IEN - 7924 if you write the maker

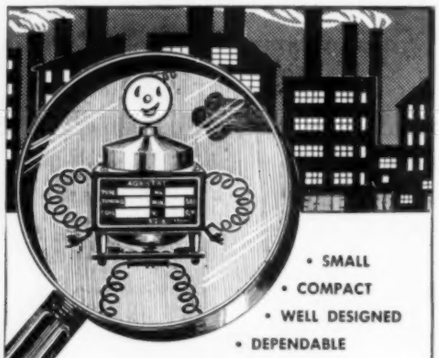
TESTING . . Technical reprint on test methods employing vibrating equipment

Calidyne Co.
749-53 Main St., Winchester, Mass.

How to test mechanical parts or structures by vibration is described in new 8-page reprint bulletin, "Test Techniques Using Electro-Dynamic Shakers". It shows a schematic experimental setup, presents a table of dynamic characteristics for resonant vibrator systems, and includes a chart to find vector amplitude from displacement, velocity or acceleration.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descripsions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7925 if you write the maker



- SMALL
- COMPACT
- WELL DESIGNED
- DEPENDABLE

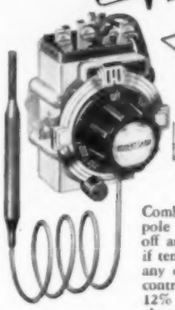
AGASTAT
TRADE-MARK
TIME DELAY RELAY
PROTECTS BIG INDUSTRY PROCESSES

Address inquiries to Special Products Division
American Gas Accumulator Company
1027 Newark Avenue, Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 7926 if you write the maker

THIS **Robertshaw**
THERMOSTAT AUTOMATICALLY

CUTS OUT AT OVER TEMPERATURE
STAYS OUT UNTIL MANUALLY RESET



1 CYCLES AS THERMOSTAT
2 AUTOMATICALLY CUTS OUT AT SET LIMIT
3 STAYS OUT UNTIL MANUALLY RESET

Combines temperature control with single pole switch. Current is automatically cut off and switch is locked in open position if temperature at any dial setting, through any cause, exceeds temperature range of control by approximately 7% in liquids or 12% in air. Switch remains open until closed by manual reset button.

Write for full information.
In Home and Industry EVERYTHING'S UNDER CONTROL
Robertshaw
THERMOSTAT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY • YOUNGWOOD, PENNSYLVANIA

BREVITY—Identify by IEN - 7927 if you write the maker

NEW MIDGET CHUCK*

For ANGLE or SNAKE DRILLING

Now in production is this amazing, practical, NEW RITMAR CHUCK. SAVES MONEY . . . REDUCES INVENTORY INVESTMENT. TRY SOME and CONVINCE YOURSELF!

*Pat. Pending

- ✓ POSITIVE GRIP . . . LESS DRILL BREAKAGE
- ✓ LESS TRIPS TO THE TOOL CRIB
- ✓ USES BROKEN DRILLS or DRILLS with Short Shank
- ✓ NO MORE SPECIAL DRILLS . . . NO MORE BRAZING

AVAILABLE in DRILL SIZES from a No. 6 to No. 50. FOR DRIVING UNITS with 10/32, 1/4—28, 5/16—24 threads.

For further detailed information, write or wire
RITMAR CO.
Designers & Manufacturers of Special Tools
183 New York Ave., Huntington, L. I., N. Y. Huntington 7135

BREVITY—Identify by IEN - 7928 if you write the maker

Sheehan's TWO-PLANE PRESS CONVEYORS SENSATION at CHICAGO SHOW

Here's the revolutionary Sheehan Model B Press Conveyor, equipped with a Flat-Wire Metal-Mesh Belt, that has Material-Handling men talking and marvelling at its performance. Think of it—at the loading end, top of belt is actually within 8 inches of floor, and with unusual two-plane design, conveyor can go under the back of presses, thereby saving working space and minimizing need for cumbersome chutes. Use of positive-drive sprockets in load-center of flat-wire belt, assures no belt slippage—oily conditions included.

LOWER-COST LONGER-LIFE
Sheehan Press Conveyors Can Solve Your Press Room Problems!

Investigate the many construction and safety features that make Sheehan Press Conveyors outstanding in performance and economy!

Write today for literature on sizes, special applications and cost data. You will be surprised at Sheehan's high quality and low prices.

R. T. SHEEHAN CO. PLYMOUTH, MICH.

BREVITY—Identify by IEN - 7929 if you write the maker

EASIEST WAY OUT OF A TIGHT SPOT

"YANKEE"

Offset Ratchet Screw Driver

If there's an inch of clearance above or below the screw and room alongside to move your hand even half an inch, you can drive or draw that screw easily, quickly with a "Yankee" Offset Ratchet Screw Driver No. 3400. Only 3⅞" long, yet it has the power of a heavy, rigid 8" driver, will seat even a No. 14 screw. Two blades, ¼" and ⅜". Special alloy steel, hardened and tempered. Other models — No. 3800 for larger screws, No. 3423 for Phillips Screws; also No. 3600-5 Kit with handle and interchangeable adapters for hollow set and cap screws. All ratcheted to give fast, powerful action with the slightest swing of the arc. Sold by industrial distributors.

Write for the "Yankee" Tool Book

"YANKEE" TOOLS NOW A PART OF

STANLEY

Reg. U.S. Pat. Off.

THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.

Philadelphia 33, Pa.

BREVITY—Identify by IEN - 7930 if you write the maker

The most complete line of wire-wound resistors—the Ohmite line! In addition to the types shown, Ohmite resistors come in more than 60 core sizes—a wide range of wattages and resistance values. Let experienced Ohmite engineers help you select *just* the right resistor for your needs.

Write ON COMPANY LETTERHEAD for CATALOG 40

OHMITE MANUFACTURING CO.

4814 Flournoy St., Chicago 44, Ill.

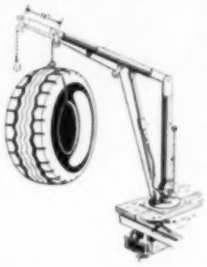
Be Right with OHMITE®

RHEOSTATS • RESISTORS • TAP SWITCHES

BREVITY—Identify by IEN - 7932 if you write the maker

CRANE . . Hand operated hydraulic, rates 1,500 lbs. without extension

Source: UNIT MFG. CO.
1227-31 Harmon Place, Minneapolis 3, Minn.



Boom extension measuring 12 in. in length is now available for the company's hand-operated hydraulic crane, previously described IEN-11983-49. It increases vertical movement from 77½ to 97½ in. and also increases swing for load clearance with an accompanying small decrease in load capacity of the standard assembly. In addition to the extension, a sheave attachment and wire rope can be specified in which the rope is anchored at the base of the column and passes through two sheaves on the boom to a load hook.

Vertical movement is by operating a lever on the column to pump hydraulic oil into the boom-supporting cylinder assembly or to release the oil for return to the pump reservoir. The crane steps into a floor socket to mount on a platform or a truck body or in a portable base as previously described.

BREVITY—Identify by IEN - 7933 if you write the maker

LUBRICATING . . Liquid compound to spray on surfaces of forging dies

Source: GRAFO COLLOIDS CORP.
299 Wilkes Place, Sharon, Pa.

Particularly for precision work

Grafo 28 is a new liquid compound to spray on hot forging dies to provide lubrication for the working surfaces. Application does not result in smoke or flash. The liquid is packaged in 5 and 55-gal. containers.

BREVITY—Identify by IEN - 7934 if you write the maker

INSULATING . . Adhesive felt cushions vibration, insulates, seals

Source: PRODUCTS RESEARCH CO.
5424-28 San Fernando Road, Glendale 3, Calif.

Kling Felt trade names a new reinforced tape and sheet with a self-adhesive back face. The tape is supplied in rolls from 25 to 100 ft. in length. Tape and sheet measure ¼ to 66 in. in width and 1/64 to ¼ in. in thickness. It is available also in shapes die cut to specification. A feature is the fact that it requires no interleaving of paper or other separating material to prevent it from adhering to itself.

Representative applications include rattle and squeak deadening, sealing against dust, wind, fumes, thermal insulating, cushioning against vibration and shock, protecting against scratches in contact with other objects.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 7935 if you write the maker

Simplifies mechanical operations and eliminates "guesswork" on assembly and maintenance work — particularly in hard-to-get-places—wherever nuts, bolts, and studs require specific tensioning. Made with dial for accurate preset tension, this wrench makes a distinctly audible "click" when preset torque is reached. Unaffected by temperature change or jarring, guaranteed accurate. Apco Torque Tools—made of heat-treated nickel steel—are available in both visible and preset dial models—in sizes from zero to 280 inch grams., up to 2,000 ft.-lbs.

SEND FOR DESCRIPTIVE FOLDER TODAY!

APCO MOSSBERG CO.

161 LAMB ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 7936 if you write the maker

Today's Best Buy is Better Air!

Electro-Mist controls oil mist from thread grinder: Lear, Inc., Grand Rapids.

SAFETY INSURANCE

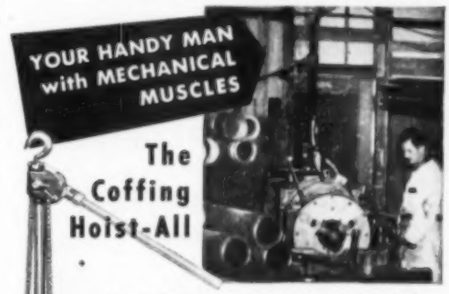
for high speed cutting and grinding

Electro-Mist eliminates coolant hazards from high speed cutting and grinding. This specially designed unit prevents dispersion of oil mist and smoke and collects both by electronic precipitation. Easy access to all parts . . . without tools. Salvages 2 to 5 gallons coolant daily. Now made in two sizes to meet any capacity requirement. Write today for Engineering Bulletin No. 251.

AAF American Air Filter COMPANY, INC.

335 Central Ave., Louisville 8, Ky. • In Canada: Darling Bros., Ltd., Montreal, P. Q.

BREVITY—Identify by IEN - 7937 if you write the maker



The Coffing Hoist-All

Let the Coffing Hoist-All take over muscle-straining tasks *anywhere* in your plant. Without its stand, this all-round handy man is a powerful hoist or puller — ready to lend a hand on such jobs as setting up machine tools, lifting and holding heavy dies and castings, loading trucks.

With its stand the Hoist-All pushes loads or lifts them. Aids in assembling large equipment, pulling sheaves, servicing vehicles . . . does all a jack will do *and more.*

The Hoist-All is available in two sizes with capacities of 2,000 and 4,000 lb. Both are factory-tested at 100 percent overload. Ask for full information on this handy, versatile tool. Write for Bulletin P8HA.

Quik-Lift Electric Hoists • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Spur-Geared Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys

COFFING HOIST CO.

Danville, Illinois

BREVITY—Identify by IEN - 7938 if you write the maker

CASTELL

LOCKTITE HOLDER

AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL

(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY INC.

BREVITY—Identify by IEN - 7939 if you write the maker

SQUARE D

for a

Complete Line

of H. P. Rated

FLOAT SWITCHES

✓ Heavy Duty

✓ Intermediate Duty

✓ General Duty

✓ Sumptrol

Write for Bulletin 550, Square D Company, 4041 N. Richards Street, Milwaukee 12, Wis.

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

DETROIT · MILWAUKEE · LOS ANGELES

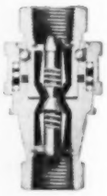
BREVITY—Identify by IEN - 7940 if you write the maker

HANSEN

QUICK CONNECTIVE HIGH PRESSURE TWO-WAY SHUT-OFF COUPLINGS

Both ends of line are positively sealed when you disconnect the Hansen High-Pressure Two-Way Shut-Off Coupling. To connect, merely pull back sleeve and push plug into socket. Identical torpedo type valves in plug and socket permit free flow of gas or liquid. To disconnect, pull back sleeve—coupling disconnects and valves automatically and instantly seal both ends of line.

Where fluid lines may be damaged by sudden strain, coupling can be mounted in bracket to disconnect automatically—leaving fluid lines free, positively sealed, and—undamaged.



Series HK

Also straight through, and one-way shut-off couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY

4011 WEST 150th STREET · CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 7941 if you write the maker

Globe Loading Lift

Speeds Loading and Unloading

Trucks, trailers, railway cars, and cargo planes can be loaded faster and at lower cost with a Globe Loading Lift. What's more, material can be handled with less risk of damage to cargo or injury to workers.

The Globe Loading Lift is a simple elevating platform that eliminates the need for ramps, gangplanks, and "muscling" of cargoes. Platform recesses into floor or driveway in "down" position. Accurate control makes for easy, flush-leveling to keep goods moving on an even plane.

Got a Lifting Problem?

GLOBE

has the answer

Muscle is the world's most wasteful lifting power. A Globe OILIFT will do it cheaper and better.

For helpful information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc., write for bulletin IE-512.

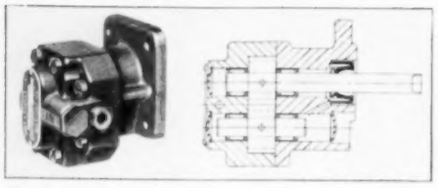
GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Philadelphia 18, Pa.

(Factories at Des Moines, Iowa & Philadelphia, Pa.)

BREVITY—Identify by IEN - 7942 if you write the maker

PUMP . . Gear type hydraulic rates 2 to 6 gpm, at 3,600 rpm.

Source: JOHN S. BARNES CORP.
139 Walnut St., Rockford, Ill.



New design of the Type-GC Constant-Flo gear pump employs Torrington needle bearings on the two shafts in the housing originally employed in the plain-bearing design. The new unit is suited for pressures to 1,000 lb. on constant duty or to 1,500 lb. intermittently and for higher pressures to specification. It is available with gear-face width measuring ¼ to ¾ in. and for operation at 1,200, 1,800 or 3,600 rpm. In the latter case displacement rates 2 to 6 gpm.

Applications include built-in use to supply hydraulic pressure for equipment operation and high-pressure fuel transfer. Distance between inlet and outlet measures 3½ inches. Mounting-plate height is 3¼ in. and good housing length is 3½ inches. The ports are threaded for ½-in. pipe.

BREVITY—Identify by IEN - 7943 if you write the maker

PROTECTING . . Dust excluding hood in plain design or with a respirator

Source: WILLSON PRODUCTS INC.
111 Thorn St., Reading, Pa.

Interchangeable window in this new hood is made of 0.04 in. non-inflammable acetate sheet. It provides good vision for the operator and permits assembly of the hood in plain arrangement or with a respirator as shown in the illustration. The hood frame is made of semi-rigid fiber and can be removed for cleaning after releasing snap fasteners. The fabric in the assembly is light-weight cotton duck. Adjustable neck and under-arm web straps are included. The hood is designed for workers operating in atmospheres containing heavy concentrations of irritating dust and low concentrations of common industrial gases and vapors.

BREVITY—Identify by IEN - 7944 if you write the maker

LIGHTING . . New demonstration room to show principles of vision and industrial lighting

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

Location of new "Lighting Mobilization Center" is in the lower level of the company's Lighting Institute. Basis is a room about 30 by 30 ft. in which wall and ceiling areas serve as demonstrations of what can be done with lighting, of how seeing and lighting work, use of color, types of fixtures.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7945 if you write the maker

BREVITY—Identify by IEN - 7946 if you write the maker

it rolls . . . it folds in any direction

SHELLCREASE

the new cushioned "wrapping paper" CORRUGATED BOARD

Save SPACE TIME MATERIAL MONEY

- Flexibility of wrapping paper and protective qualities of corrugation.
- Permits complete wrapping job in one operation.
- Readily "molds" to any irregular shaped object with "glove-fit."
- Eliminates costly, space-wasting stuffing material.
- SHELLCREASE-wrapped items occupy less carton space.

Requires no other outside wrapping for the flat surface is high quality Kraft paper. Use any kind of fastener . . . pressure-sealing tape, twine, gummed tape, staples, stitches, or steel strapping. Available in rolls up to 72" wide, 250 feet long or in sheets, cut to order. Four weights: 35, 55, 70 and 100 lb. basis. (Approved under Army and Navy Specs.)

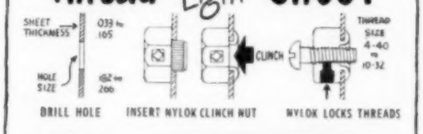
Write Dept. 591-F for samples and literature.

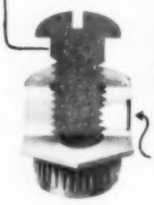
Shelton Manufacturing Co., Inc.
591 Ferry St., Newark 5, N. J.

Corrugated-Paper Products Since 1919

BREVITY—Identify by IEN - 7947 if you write the maker

"Thread" Light Sheet





NYLOK

SELF-LOCKING CLINCH NUTS

Nylon Insert Holds Tight

Meets Military Specifications

No fastening problem with NYLOK *Self-locking* Clinch Nuts. Simply press in nut, clinch, insert screw and run it down. Resilient nylon plug assures positive lock. Assemble from either end. Use again with no loss of locking feature. Machine screw sizes #4 through #10 available in aluminum or steel. Write for details today.

The NYLOK Corporation

475 Fifth Avenue New York, N. Y.

Don't Design AROUND Your Fastening Problem—Design With NYLOK

BREVITY—Identify by IEN - 7948 if you write the maker

the Revolving Joint with Shock Absorbers

ROTARY UNIONS

TRADE NAME

Ball bearing construction, anti-wobble shafts, and a tight rust-proof and dirt-proof Monel mechanical seal make ROTARY UNIONS outperform and outlast other revolving connections.

In addition, ROTARY UNIONS *float* on flexible hose connections which absorb misalignment and shock, adding months of trouble-free service. Positive sealing at steam pressures up to 200 PSI. ROTARY UNIONS are the most efficient connection for heating and cooling purposes on all revolving connections. Write for Catalog 600-N for complete information.

"WHERE Good Connections COUNT"

PERFECTING SERVICE COMPANY

332 Atlanta Ave. Charlotte, N. C.

Offices in Jersey City — Chicago — Philadelphia — Cleveland — Pawtucket, R. I.

▼ BREVITY—Identify by IEN - 7949 if you write the maker ▼

QUALITY + SERVICE

2 GOOD REASONS TO STANDARDIZE ON

MAUREY FHP V-DRIVES

Maurey V-Drive quality means lasting, low cost, trouble-free performance plus prompt delivery from complete stocks. Maurey Hi-Q single and two-groove and variable pitch V-Pulleys of Pressed Steel and Cast Iron come in 1736 different sizes for any FHP speed ratio or standard shaft. Maurey MOR-GRIP long-life V-Belts meet all FHP drive needs. In addition, Maurey builds special V-Drives to meet special requirements. Investigate the Maurey combination of Quality, Service and Low Cost, and see why leading manufacturers have standardized on Maurey V-Drives.

Immediate Delivery from complete stock at better Distributors.

Write today for Bulletins describing
Maurey FHP V-Belts — Bulletin FHP-101
Hi-Q Cast Iron V-Pulleys and
Hi-Q Pressed Steel V-Pulleys — Bulletin OEM-2000

MAUREY MANUFACTURING CORP.
World's largest manufacturer of pressed steel and cast iron FHP V-Pulleys . . . serving industry since 1917

2916 South Wabash Avenue • Chicago 16, Illinois

▼ BREVITY—Identify by IEN - 7950 if you write the maker ▼

THEY CUT AND CUT AND CUT

Every JOHNSON METAL CUT-OFF BAND SAW

is a BEAR for WORK and Lasts Indefinitely

MODEL J cuts 10" rounds, 18" flats. Available as a wet or dry-cutting machine.

When you buy a Johnson Band Saw you can be sure it will stand up and deliver constant service year after year. Johnson Saws are ruggedly built from the best standard parts available. They are adaptable to any cutting job, requiring only a minute's time to change from light to heavy stock. For extra capacity, accuracy, speed and economy, insist on Johnson with its many outstanding features.

MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

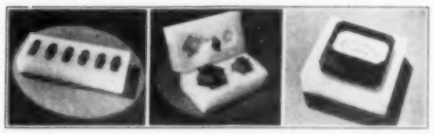
THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

▼ BREVITY—Identify by IEN - 7952 if you write the maker ▼

PACKAGING . . Foamed plastic shaped to protect delicate equipment

Source: GLO-BRITE PRODUCTS
6413-17 N. California Ave., Chicago 45, Ill.



Krystalite trade names the company's form of foamed polystyrene plastic. It is intended to protect delicate and precision products for shipping and handling. The material weighs 1½ to 2 lb. per cubic foot. It shows negligible moisture absorption. It can be sawed, drilled, routed and molded. K-factor is 0.27 which makes it comparable with excellent insulating materials.

The company is prepared to supply prefabricated, pre-grooved and made-to-order pieces in which specified work can be nested. It also will supply the material in widths to 20 in., lengths to 6 ft., and thickness from ½ to 12 inches. The cushioning action is due to the individual cells in the structure which contract under shock conditions and gradually build up resistance as the cells partially break down.

▼ BREVITY—Identify by IEN - 7953 if you write the maker ▼

MARKING . . Self-adhesive labels in specified sizes to 26 by 38 in.

Source: TOPFLIGHT TAPE CO.
114-18 E. Market St., Room 12, York, Pa.

Sample unit on request

Print-Stix designates a new line of labels representing further development of the company's self-adhesive printed tape. The new units are supplied as flat individual pieces with printing and color as specified in any quantities above the minimum order for 5,000. Each piece has a protective backing that covers the adhesive side and is stripped off just prior to application on a product.

▼ BREVITY—Identify by IEN - 7954 if you write the maker ▼

DRIVE . . Speed reducer, double reduction design, 1 to 100 hp.

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Eight unit sizes make up a new Type-DH line of double-reduction speed reducers. Twelve standard ratios range from 6.25 to 58.3 to 1. Input and output shafts are in line with each other. The gears are single-helical hobbed design in the split housing. Shafts are on anti-friction bearings. Splash lubrication is used.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 7955 if you write the maker ▼

HELP WANTED—MALE

IF YOU CAN'T HIRE DRAFTSMEN

UNIVERSAL DRAFTING MACHINES will increase your present staff output

Many companies are now turning to Universal Drafting Machines to increase the man-hour output of the draftsmen they have.

Combine into a single precision-built unit all the most used tools—every feature a skilled draftsman requires. Cuts drafting time up to 40%. Reduces fatigue. Can be adapted while in service to any board angle.

For fifty years Universal Drafting Machines have been synonymous with faster work and lower costs. Get the complete story — write Universal Drafting Machine Corporation, 7960 Lorain Ave., Cleveland 2, Ohio.

UNIVERSAL
DRAFTING MACHINE — DURALINE SCALES

▼ BREVITY—Identify by IEN - 7956 if you write the maker ▼

CONTROL POWER BETTER

ROCKFORD CLUTCHES

▼ BREVITY—Identify by IEN - 7957 if you write the maker ▼

Put ALL of the Oil to Work

Get the Most OUT OF YOUR CIRCUITS

Interchangeable Governor Controls

At right is illustrated a standard pressure-compensating governor used in RACINE Pumps.

Top circuit efficiency demands effective regulation of volume and pressure. RACINE Pumps are all equipped with built-in governors — an exclusive RACINE feature. These governors regulate pressure and control the oil flow, delivering *only* the volume needed for the work of the circuit. They "put all of the oil to work." No by-passing — no relief valves — heating is reduced — horsepower conserved.

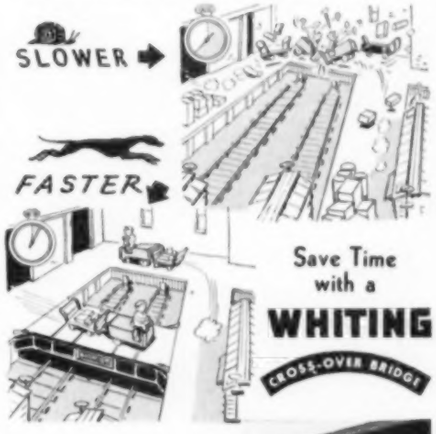
Governor-controlled RACINE Pumps give you efficiency, flexibility, and economy over a wide range of circuit conditions. Why not review the advantages "Variable Volume" offers for machines in your plant and for your product.

RACINE

Write for your copy of our new 3-color Hydraulic Equipment Catalog. Address Racine Tool & Machine Co., 1761 State Street, Racine, Wis.

STANDARD FOR QUALITY AND PRECISION

▼ BREVITY—Identify by IEN - 7958 if you write the maker ▼



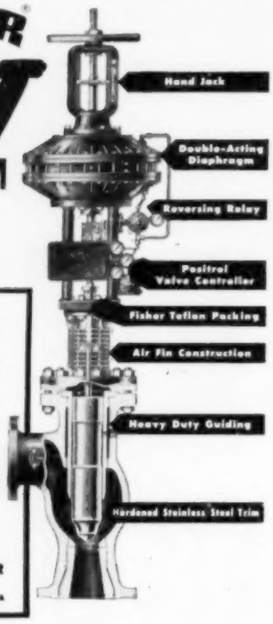
Save Time with a WHITING CROSS-OVER BRIDGE

You can save time — you can save money, and you can speed up materials movement from dock-to-dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise—Ground-Level—and Roll-Away). Illustrated at right is a two-track span Whiting Ground-Level Cross-Over Bridge.

Write for Bulletin MS-C-400 and learn how these practical Cross-Over Bridges fit your materials-movement requirements. Whiting Corporation, Harvey, Illinois.

BREVITY—Identify by IEN - 7959 if you write the maker

FISHER *AMT DIAPHRAGM MOTOR VALVES



Provides the extreme power to actuate large single-seated valves for tight shut off on large pressure drops up to 5,000 lbs. UNBALANCED FORCES. Full pneumatic performance. Double diaphragm avoids backlash effects probable with single diaphragm construction.

WRITE FOR BULLETIN E-5700

FISHER GOVERNOR COMPANY
MARSHALLTOWN • IOWA

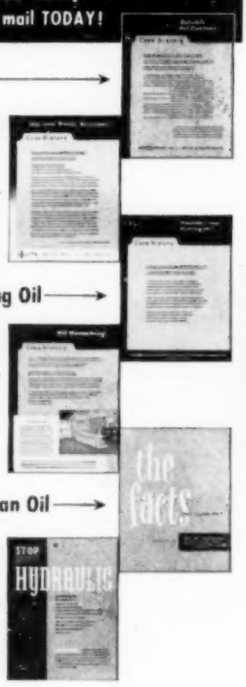
BREVITY—Identify by IEN - 7960 if you write the maker

Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

GET THE DETAILS!

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

TEAR OUT THIS AD, check the boxes and mail TODAY!



☐ Soluble Oil Coolant → Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

☐ Chip and Waste Removal → Case Histories: Manufacturer of Fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

☐ Machine Tool Cutting Oil → Case History: Wagner Electric Corp., St. Louis.

☐ Oil Quenching → Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

☐ The Facts About Clean Oil → 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

☐ Hydraulic Bulletin → 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

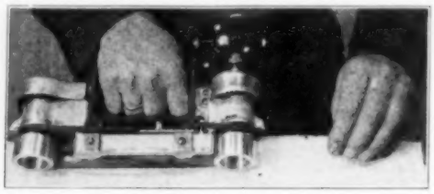
CLEAN OIL ENGINEERING

Honan-Crane Corp.
802 WABASH AVENUE
LEBANON, INDIANA
A Subsidiary of Houdaille-Hershey Corp.

BREVITY—Identify by IEN - 7962 if you write the maker

PACKAGING . . Heat sealing machine to assemble moisture barrier materials

Source: DOUGHBOY INDUSTRIES INC.
51 Doughboy St., New Richmond, Wis.



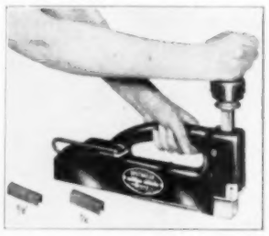
Power hand sealer is a new motor-driven electrically-heated machine to apply even pressure and heat for assembly of moisture-barrier materials, particularly cotton or scrim-back laminations to meet Army-Navy packaging specifications. The machine weighs a little under 7 pounds. It tsoves forward at 200 ipm. Wiring and electrical components are designed for constant operating temperature to 600 deg. F. Throat dimension measures 2 inches. List price is $117.

The four wheels or compression rollers are chain connected for power drive so the operator is required only to guide the machine as it moves forward. Heat is governed by a thermostat. Cartridge-type electric elements are assembled within the 7¼-in. heating bars on the machine.

BREVITY—Identify by IEN - 7963 if you write the maker

STAPLING . . Strike type tool drives 16 gage staple, legs to ⅞ inch

Source: SPOTNAILS INC.
1216-20 Sherman Ave., Evanston 20, Ill.



New design of the Spotnailer, previously described IEN-11886-49, now employs a molded housing that can be operated by striking its cushioned head with the fist or a soft-face hammer. The tool takes a "stick" of 16-gage staples in its spring-backed magazine, drives them one at a time. The staples have a ½-in. crown and are coated with a resin to specification to make a firm bond with wood into which they are driven. The machine will drive either flush or countersunk.

BREVITY—Identify by IEN - 7964 if you write the maker

MACHINE TOOLS . . Catalog in Spanish for Latin American industry by 14 American makers

Amertool Services, Inc.
4703 Marburg Ave., Cincinnati 9, Ohio

Cooperative organization of 14 American machine-tool manufacturers has issued a new 84-page catalog printed entirely in Spanish. It presents illustrated specifications on the machines made by the member companies together with application notes, attachments, and tools.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7965 if you write the maker

Stop CORROSION in your Steam System WITH CORAVOL BOILER

When fed to your steam system, CORAVOL: (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, CORAVOL protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special formulas of treatment for:
Boiler feed water . . . hot water supply . . . refrigerating brine . . . cooling and condenser water . . . rapid scale removal . . . coagulation . . . algae control . . . fuel oil supply . . . soot removal.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the CORAVOL process.

Western Chemical Co. is owner of U. S. Patent No. 2653024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

BREVITY—Identify by IEN - 7966 if you write the maker

Mystik Tapes ...for Industry, for Defense

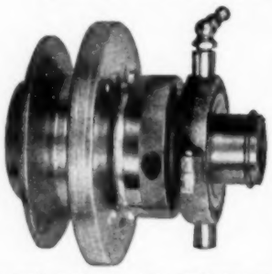
The toughest, tightest gripping all-around cloth tape ever made. MYSTIK Tape No. 5800C handles protective problems under every condition—water, salt spray, abrasion. Does numerous holding, sealing, identifying jobs. Made to conform with government spec. JAN-P-127, Type I, Grade B.

WRITE for full information and free sample roll to Mystik Adhesive Products, 2644 N. Kildare, Chicago 39, Illinois

BREVITY—Identify by IEN - 7967 if you write the maker

NEW DISC CLUTCH

for gasoline engines, electric motors, speed reducers, etc.
operates with light pressure
picks up load without grab



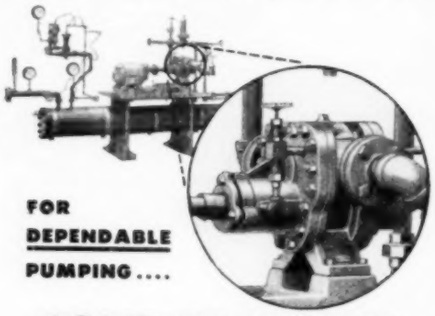
integral V belt pulley
integral sprocket
cut off coupling or sleeve
easy manual operation
adjustable
powerful

For stub or through shaft application, these new Type K clutches—rated up to .8 H.P. at 100 r.p.m.—have generous safety factors throughout to stand severest service. Threaded steel adjuster permits precise easy adjustments to assure maximum capacity and minimum engaging pressure. Clutch locks itself in engaged position.

Write for new descriptive Bulletin K-1, including complete specifications.

THE EDGEMONT MACHINE CO.
2200 HOME AVENUE • DAYTON 1, OHIO

BREVITY—Identify by IEN - 7968 if you write the maker



FOR DEPENDABLE PUMPING....

COME TO KINNEY

This fuel oil pumping and heating unit manufactured by The Engineer Company of New York depends on a Kinney SD Rotating Plunger Pump. The SD Pump is a wise choice because it is doubly-dependable: (1) Delivers liquids with meter-like volumetric efficiency, due to its rotating plunger mechanism. (2) Gives dependable service, too, . . . operates in a wear-free, trouble-free manner. SD Pumps are available plain or steam-jacketed, in capacities from 2 to 3000 GPM . . . for many operating pressures. Write for Bulletin L-51.

Kinney LIQUID PUMPS

KINNEY MANUFACTURING CO.
3564 Washington Street, Boston 30, Mass.
NEW YORK, CHICAGO, CLEVELAND, HOUSTON, NEW ORLEANS, PHILADELPHIA, LOS ANGELES, SAN FRANCISCO, SEATTLE, FOREIGN COUNTRIES.

BREVITY—Identify by IEN - 7969 if you write the maker

ELECTRODE HOLDERS

Weiger-Weed Ejector Type Holders represent the closest approach ever made to an absolutely trouble-free resistance welding holder. Designed and built for the most severe conditions in resistance welding, they have proved themselves in thousands of hours of failure-free service. Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Ave., Detroit 4, Michigan.

Send for this free booklet of latest information on Resistance Welding

WEIGER-WEED

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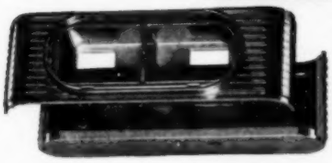
Resistance Welding ELECTRODES
DIES • TIPS • WHEELS • HOLDERS

BREVITY—Identify by IEN - 7970 if you write the maker

MODERN PROBLEMS

get modern answers with DUREZ



MOLDINGS SOLVE PRICE PROBLEM

...widen market for 2-lens camera

● Three-dimensional photography has been made available to thousands of eager fans with the help of cost economy resulting from use of Durez for this 2-piece camera body. Skillful use of a medium-impact, high-finish molding compound is evident. Intricate undercuts, through-holes, functional ribs, and molded-in metal inserts help to give purchasers a precision unit at a volume-market price. Assembly is simple, finishing is almost nil.

Good design saves tool and jig costs

Though molded in one piece, this adding machine housing of Durez phenolic needs no machining but a simple undercut, which is done by the molder. Checked for close tolerances, the piece owes its accurate fit and easy assembly (via 4 molded-in corner holes for locating pins) to good design and molding technique. Durez has flow and strength characteristics that permit unusual freedom in design, and make it possible to save the expense involved in numerous tools and jigs.

MORE THAN 300 different Durez compounds have been developed to meet a wide range of specifications, and competent field technicians will gladly help you choose and use the one that best fits your requirements. To keep abreast of new uses of the phenolics, write on your office letterhead for our monthly "Plastics News." Durez Plastics & Chemicals, Inc., 1708 Walck Road, North Tonawanda, New York.

DUREZ

Phenolic Plastics that fit the job

BREVITY—Identify by IEN - 7972 if you write the maker

HANDLING . . Ball bearing roll stand for rolling support under a reel

Source: METZGAR CO.
417 Douglas St. N. W., Grand Rapids 4, Mich.

A reel loaded with wire, cable, rope, belting, or with woven materials can be rolled into position over a built-in steel ramp to ride ball-bearing rolls in this new stand. The front roll has a locking pin to prevent rotation. The rear roll is adjustable to take reels measuring 16 to 96 in. in flange diameter which represents stand capacity.

Two sizes in the line have 2 and 4-ton load ratings. Overall width of the frame is 30¼ and 46¼ inches. The load-carrying rolls are 25 in. in length on a 1-in. steel shaft in the smaller assembly. They are 41¼ in. in length on a 1¼-in. steel shaft in the larger one. Weights are 208 and 307 pounds.

BREVITY—Identify by IEN - 7973 if you write the maker

FABRIC . . Plastic coated sheet simulates actual alligator hide

Source: L. E. CARPENTER & CO.
130 W. 42nd St., 14th Floor, New York 18, N. Y.

Employed in Kaiser cars

Dragon Leather trade names new fabric fused with vinyl plastic to present a surface appearance strikingly similar to that of alligator hide. The fabric is available for use in upholstery. It will not crack, flake or stain. It is washable and sufficiently pliable to be shaped into most any assembly. It is made in a range of colors.

BREVITY—Identify by IEN - 7974 if you write the maker

MARKING . . Hand operated press with characters on hard steel dial

Source: CLEARVIEW CO.
180-84 Stanton St., New York 2, N. Y.

Metal plates, to 2 by 3 in., are positioned for marking one character at a time on the sliding table of this new press. The hardened-steel dial is rotated in connection with a spring-backed stop to position the characters. The dial is brought down to make an impression by moving a lever on the side of the housing. Depth of the impression can be adjusted. Spacing between letters is tied in with operation of the dial which carries 40 sharp-face characters ⅛ in. in height. List price is $100.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7975 if you write the maker

TRIPLE PURPOSE MACHINE

FILES...SAWS...STONES

ILLINOIS DIE FILING MACHINE

An accurate, smoothly-operating machine that files, saws and stones the most intricate die shapes . . . eliminates tedious hand operations . . . reduces costs. It is quality-built for long, trouble-free service . . . hardened and ground shafts running in bronze bushings minimize wear. The holding chuck and clamping device provide perfect file alignment.

Sawing

Write for descriptive literature

Stoning

ILLINOIS TOOL WORKS
2501 N. Keeler Ave. • Chicago 39, Ill.
MANUFACTURERS OF METAL CUTTING TOOLS AND SHAKEPROOF PRODUCTS

BREVITY—Identify by IEN - 7976 if you write the maker

THEY REALLY TAKE A BEATING . . . AND YOU CAN'T BEAT 'EM FOR CUTTING COSTS!

ILLINOIS GLOVES

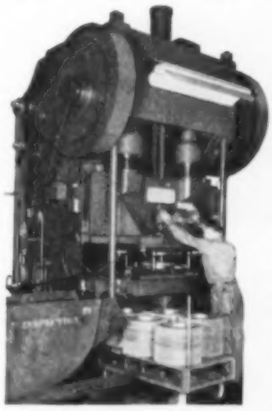
ARE BUILT TO LAST

They'll stand the strain or the roughest job . . . cut down the strain on your work glove budget. Illinois Gloves are engineered for the job . . . made of materials that undergo stringent testing as to abrasion and tensile strength when in contact with oil, acids, water or heat. Get more service for every glove dollar you spend. Get Illinois gloves!

Write Industrial Division Illinois Glove Company for catalog & prices

ILLINOIS GLOVE CO., CHAMPAIGN, ILL.

BREVITY—Identify by IEN - 7977 if you write the maker



2000 CLUTCH PLATES PUNCHED PER SHIFT

Many unusual jobs far afield from bending can be done economically on Steelweld Presses built with simple variations to suit requirements. The machine illustrated provides a low-cost method of punching clutch plates of 11 to 13 gauge metal.

Clutch plates of sizes 11¾" to 22¾" O.D. are made with this 300 ton Steelweld Press.

Send for free copy of catalog No. 2011

STEELWELD BENDING PRESSES CATALOG No. 2010

THE CLEVELAND CRANE & ENGINEERING CO.
4237 East 281st St. Wickliffe, Ohio

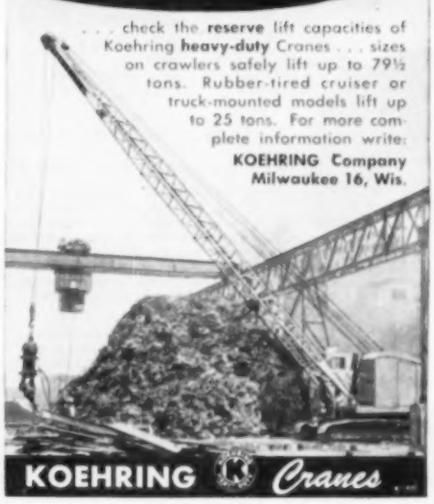
STEELWELD PRESSES

BREVITY—Identify by IEN - 7978 if you write the maker

For BIGGER DAILY TONNAGE

. . . check the **reserve** lift capacities of Koehring **heavy-duty** Cranes . . . sizes on crawlers safely lift up to 79½ tons. Rubber-tired cruiser or truck-mounted models lift up to 25 tons. For more complete information write:

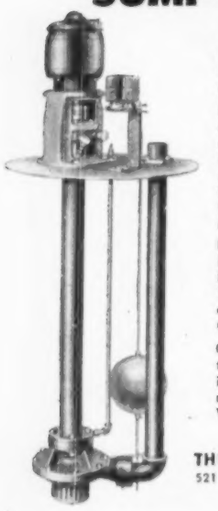
KOEHRING Company
Milwaukee 16, Wis.



KOEHRING Cranes

BREVITY—Identify by IEN - 7979 if you write the maker

NEW Deming SUMP PUMPS



● These new Deming Sump Pumps are designed for trouble-free service, easy maintenance and long life.

Features include heavy-duty construction, close tolerance dowel-ring fits from motor to impeller, positive alignment of all rotating and guide bearing parts, column connections flanged and bolted for easy maintenance.

Pumps can be furnished in cast iron, bronze, Monel and stainless steel. Sizes range from 1 to 10 inch discharge with capacities from 10 to 3000 G.P.M., and heads up to 140 ft.

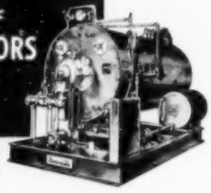
Complete details, selection tables, and accessories are illustrated and explained in new Bulletin No. 4600-A. Write for a copy.

THE DEMING COMPANY
521 Broadway • Salem, Ohio

BREVITY—Identify by IEN - 7980 if you write the maker

Powermaster

Fully Automatic
STEAM GENERATORS
AND HOT WATER BOILER UNITS



15 to 500 HP.—15 to 200 p.s.i.—for light oil, heavy oil, gas and gas/oil firing.

- SIMPLIFIED INSTALLATION
- SAVES PLANT SPACE
- REDUCES FUEL COSTS
- HOSPITAL-CLEAN OPERATION
- AUTOMATIC SAFETY PLUS
- EASY BOILER MAINTENANCE
- SAVES MAN-HOURS DAILY

Write For Bulletin

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa. Established 1885

BREVITY—Identify by IEN - 7981 if you write the maker

REZNOR

WORLD'S LARGEST-SELLING GAS UNIT HEATER

Hung from ceiling or mounted on floor

Just tell the man you want a Reznor Unit Heater

Yes, your heating man knows what you want and why, when you ask for a Reznor gas unit heater. Ask the man to put a Reznor heater in before winter too. Again, he will realize that you know a good thing . . . because installation costs are lower in warm weather. Reznor units are sold in single or multiple units for commercial, industrial and domestic use. Want a catalog? Write today.

REZNOR MANUFACTURING CO
10 UNION ST. MERCER, PENNA.
Send me 20 page catalog in full color

Name _____
Firm _____
Address _____
City _____ Zone ____ State _____

BREVITY—Identify by IEN - 7982 if you write the maker

CONVEYING . . Bucket elevator for chemicals, food products, parts

Source: COUNSEL MACHINE CO.
6-10 Hathaway St., Wallington, N. J.

Robo-Lift is a new bucket elevator in which the product to be handled is fed from a small supply hopper into a vibrating feeder. It moves to a short horizontal run of the buckets with their lips overlapping to eliminate spilling. The product is carried upward in the buckets to discharge at the top where the buckets are inverted by a stationary tipper or emptied by a diverter chute. Impact is essentially eliminated so fragile parts can be handled safely.

The buckets are made of stainless steel and carry Oilite trunnion bearings on their two sides. These bearings engage pins extending inward from the two drive chains which are operated by a ½-hp. motor for a conveyor standing 10 ft. in height. Housing width is 10¼ and 14¼ inches in two sizes. Inclination can be at any angle between horizontal and vertical. Two standard units ride at 70 and 90 degress. Load handling capacity for the two widths is 1 and 2 cfm.

BREVITY—Identify by IEN - 7983 if you write the maker

MARKING . . Tape dispenser encloses rubber printing roller unit

Source: TRAVERS & CO.
663-67 Atlantic Ave., Boston 11, Mass.

Ad-O-Matic No. 1 is a new gummed-tape dispenser that includes a rotary printing head to mark with ink in any one of six specified colors. The printed impression is made as the tape is moved out of the dispenser for application. Ink will remain alive on its roller for periods to 30 days. The rubber mat can be changed quickly.

Feed length is maximum at 7 inches. The housing takes rolls of outside-gummed tape to 500 ft. in length and from ¾ to 1½ in. in width. The printed surface is maximum at 4 in. in length. The ink is quick-drying and waterproof.

BREVITY—Identify by IEN - 7984 if you write the maker

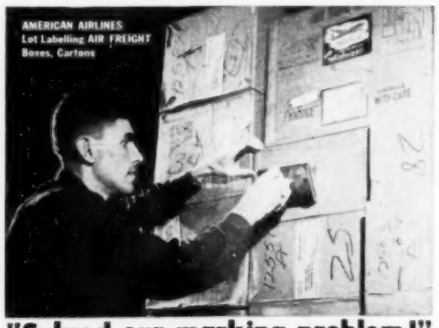
CUTTING . . How to select blades for masonry cutting described in booklet

Eveready Briksaw Co.
1507-11 S. Michigan Blvd., Chicago 5, Ill.

Twenty-one questions on abrasive-blade selection and use are answered in new 24-page Booklet 101, "How to Cut Blade Costs in Masonry Cutting." They range from how an abrasive blade cuts to use of diamond blades. A table lists recommended blade type and procedure by the material to be cut.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7985 if you write the maker



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"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . "for marking boxes, cartons, packages "Quick, clean, accurate, easy-to-use. Prints *1000* or more clear, sharp copies from *one stencil . . one inking*. Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

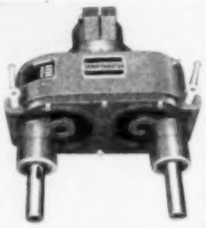
IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES
At Your Office or Shipping Room Supply Dealer

MULTISTAMP
STENCIL DUPLICATOR
MANUFACTURED DIRECT BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 7986 if you write the maker

Performance Proved

THRIFTMASTER



Gear Driven Eccentric Type
ADJUSTABLE
DRILLHEADS

- Rugged FULL BALL BEARING Construction — hardened parts used throughout.
- 51 STANDARD MODELS — to fit a wide variety of specifications.
- DRILLING CAPACITIES — from #60 to 1½" in Steel — rated to drill disintegration.
- FULLY ADJUSTABLE — from 1" min. to 14.2" max. — 2 to 4 Spindles.
- For Drilling, Reaming, Tapping and other machining operations.
- Prompt Delivery on Standard Heads.

Full Line of Standard Universal Adjustable and Special Fixed Center Drillheads . . . Automatic Reverse Tap or Drill Units. Write for the Thriftmaster Catalog.

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER PRODUCTS CORPORATION
1040 N. Plum St., Lancaster, Pa.
also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS
4 Sizes • Friction & Positive Drives • Capacity 1-16 to 3" in Steel

BREVITY—Identify by IEN - 7987 if you write the maker

IT'S ALWAYS RIGHT
and right on schedule

. . . with wiring materials via Graybar

You're sure every item on your wiring materials and supply order will be right for the job—and if you schedule ahead with Graybar, you'll stand the best possible chance of having everything arrive on the job site when it's needed. You know all the items will fit together properly. Because you can depend upon Graybar delivery commitments, there'll be no waiting for conduit to come from one supplier . . . boxes and fittings from another . . . wire from a third. And your order gets an important "plus" of personal interest, for Graybar is wholly owned by its operating and retired personnel. From the man who takes your order to the one who packs it, we're anxious to serve you well.

EXPERT HELP WHEN YOU NEED IT

For help in planning complicated systems or solving difficult wiring problems, a Graybar Inside Construction Specialist is available. His recommendations, supplementing the knowledge of your local Graybar Representative about materials and delivery, will help keep your projects moving "right on schedule".

A single source for all your needs

Graybar distributes products made by more than 200 leading manufacturers—a total of over 100,000 carefully selected materials, supplies, equipment and tools for wiring, lighting, communication, power, and other electrical needs.

For any job—large or small, indoors or out—a single order to Graybar can cover all your requirements.

Order ahead for on-schedule deliveries

As you know, reconversion of essential industry is producing shortages of various types of electrical equipment. To make sure your jobs proceed as planned, place your orders as far ahead as possible—and always order from Graybar. For materials in short supply, Graybar will establish firm shipping dates to help you or your contractor work out and *stick to* practical timetables. 124-128

You get the best of everything electrical Via GraybaR

IN OVER 100 PRINCIPAL CITIES

BREVITY—Identify by IEN - 7989 if you write the maker

send for this sample . . . it may open your eyes!

A simple request will bring you a sample of one of the most amazing materials ever developed by science. It is Tufflex, the fiber felt, and it's cutting production costs—adding quality—in many industries today. Tufflex is downy soft—amazingly resilient. It cushions. It withstands heavy impact blows. It insulates. It deadens sound. It is easily fabricated to any size or shape. Tufflex is available in a variety of densities and thicknesses—and in moisture resistant and fire retardant forms. Learn more about the many new uses for Tufflex—send today for your sample and complete information. Wood Conversion Company, Dept. 126-81, First National Bank Bldg., St. Paul 1, Minnesota.

TUFFLEX* A Product of Weyerhaeuser

*REG. U. S. PAT. OFF.

BREVITY—Identify by IEN - 7990 if you write the maker

good head for fast work

This head lets you see what you're doing; keeps controls at the comfort level; responds quickly with minimum effort. Correct gear ratio makes manual head traversing easy, lets you spot the head right on the "O." Gilbert "heft" in the right places minimizes deflection, holds accuracy even when drilling large work at outside limits of head and arm travel. Write for new Bulletin No. 349. *Those who buy Gilbert buy Gilbert again.*

THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

BREVITY—Identify by IEN - 7991 if you write the maker

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 51-59 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK Branch Offices in Principal Cities
Photocopy Papers • Photo-copying Machines • Photographic Papers

BREVITY—Identify by IEN - 7992 if you write the maker

CALCULATING . . Quality monitor signals correct inspection procedure

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

New monitor has been added to the company's product-quality-control equipment to assist in maintaining product inspection on a continuous sampling basis in order to maintain a desired average outgoing quality level. The monitor assembles a predetermining counter reading to a total of 400 with electrically-operated counters for the units inspected, units rejected and units sampled. Signal lights on the housing indicate whether operation is upon total inspection or sampling inspection as the quality control proceeds.

The main monitor connects electrically to a signal housing located at an inspector's position. This housing mounts two switches to be operated each time a unit is inspected. They actuate "accept" or "reject" circuits back to the monitor. The latter unit, in turn, closes the circuit to a white or a red signal lamp to tell the operator that he can go ahead on a sample basis or that he should operate for total inspection.

A given number of consecutive acceptable units is established and set up on the predetermining counter to begin operation by 100 per cent inspection. Upon setting up this number the white light will indicate that the inspector should continue on a sampling basis. He does this until a reject is found. He replaces the defective unit with a good one and operates the reject switch. The signal lamp circuits will then change so the red lamp is lighted and inspection is continued on a 100 per cent basis until another defective unit is found or until the clearance number is reached. In the former case the defective unit is again replaced and 100 per cent inspection is resumed. In the latter case the red-lamp circuit will open and the white-lamp circuit will close to instruct the operator to resume sampling.

Both the monitor and the signal housing are made of metal, the former measuring 12 by 6 by 6 in. and the latter 4 by 4 by 2 inches. Connection in standard construction is by a 6 ft. multi-conductor cable. Operation is on 110-volt 60-cycle ac. Maximum counting speed is 500 units per minute.

BREVITY—Identify by IEN - 7993 if you write the maker

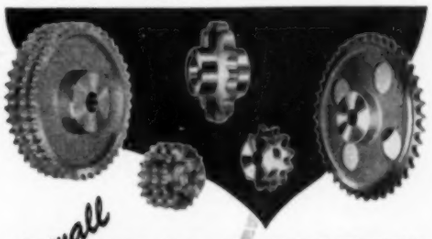
STORING . . Galvanized iron bin to safely store inflammable materials

Source: INDUSTRIAL PRODUCTS CO. 2801 N. Fourth St., Philadelphia 33, Pa.

The hinged cover on this new safety storage bin is fitted with a fusible link that melts in case the contents of the bin catch fire so the cover will hinge to closed position and smother the fire. The bin is made in three sizes measuring 20 to 24 in. in width, 35 to 58 in. in length, and 33 to 37 in. in height. The galvanized-iron panels are reinforced with angle-iron corners.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 7994 if you write the maker



Sewall STOCK SPROCKETS

★SPEEDY SERVICE
★PRECISION BUILT
★COMPLETE LINE

If your product will permit a standard pitch, look it up in the Sewall Catalog of Stock Sprockets. Or let us send you an estimate on your special design. True running, durable gears and sprockets all add up to overall quality in Sewall products.

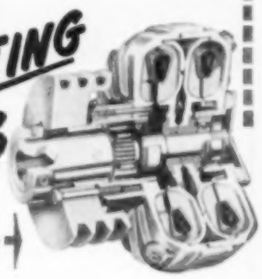
CUSTOM-BUILT GEARS *for every requirement*

Distributors of Atlas Roller Chain
Send for FREE Sprocket CATALOG
or Phone Us at NEst 1381

E. B. SEWALL MANUFACTURING CO.
686 Glendale St. • St. Paul 4, Minn.

BREVITY—Identify by IEN - 7995 if you write the maker

Avoid STARTING STALLS



A Twin Disc HYDRO-SHEAVE DRIVE is the best protection you can buy against overloading your motor with heavy starting loads. Moreover, it gives you the advantage of smooth, rapid acceleration *plus* the possibility that you can select a motor on the basis of actual *running* load instead of *starting* load requirements.

Records confirm that through the application of HYDRO-SHEAVE DRIVES, the dangers to motor and machinery have been minimized; V-belt life lengthened considerably and shock loads between motor and machine effectively cushioned out. For complete information ask for Bulletin No. 145-B.

Clutches & Hydraulic Drives TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford (Ill.)
BRANCHES: CLEVELAND • CHICAGO • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TORONTO

BREVITY—Identify by IEN - 7996 if you write the maker

Let this all-purpose DEWALT save money in *Your* plant

Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space—and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., Dept. IE-8, Fountain Ave., Lancaster, Penna.

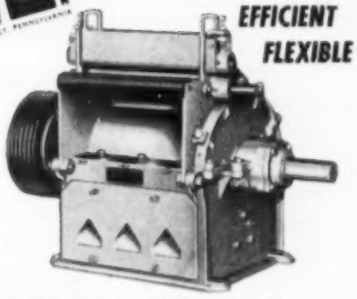
DEWALT INC.
A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 7997 if you write the maker

KNIFE CUTTERS

SPROUT WALDRON MUNCY PENNSYLVANIA

RUGGED EFFICIENT FLEXIBLE



Sprout-Waldron heavy-duty knife cutters feature a variety of feeding arrangements to meet your special needs. From vari-speed compression feed rolls for flocking, to conveyor-feeder arrangement for continuous uniform feeding, these versatile units can handle virtually any cutting job. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 7998 if you write the maker

THE *Universal* FLEXIBLE METAL HOSE

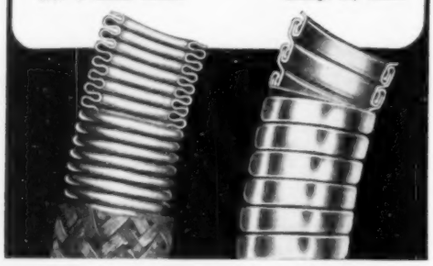
• In All Available, Workable Metals
• In Sizes From ⅛" to 30" Diameters

STANDARD
We offer you a wide selection of flexible metal hose for conveyance of gases, liquids, semi-solids, dust, etc. — for moisture-proof armored conduit and control casings — and many other applications.

SPECIALS
Our engineering department will offer detailed recommendations on any special problems without obligation to you.

Write for UNIVERSAL METAL HOSE Catalog U-101

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue Chicago 23, Illinois



BREVITY—Identify by IEN - 7999 if you write the maker

TAKE IT ANYWHERE!

BECKER
Self-Contained
SPRAY GUN
PRESSURE-POWERED *with* INEXPENSIVE CO2 CARTRIDGE

ONLY $15.95 *with three cartridges*

This *completely* portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Heavy-gauge, chrome-plated steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO_2 cartridge sprays up to 21 liquid ounces, depending on viscosity. Use it for paint, varnish, enamel, oil, fireproofing, rust-proofing, disinfecting. If your industrial distributor can't furnish, order direct and we will ship postpaid. (Extra CO_2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

SULLIVAN BECKER CO., DEPT. 191-H, Kenosha, Wis.

BREVITY—Identify by IEN - 8000 if you write the maker

In the hushed interior of this roomy, airy Burgess-Manning Acousti-Booth you hear easily . . . clearly while telephoning. A thick blanket of sound-absorbent material lines the walls to soak up noise. You can talk in a normal voice without strain.

Doorless construction. Easy to maintain. Movable. Handsome appearance. Wall or floor models.

Hear Here!

You can hear clearly in this quiet atmosphere

Mail Coupon For Free Booklet
Burgess-Manning Company
Architectural Products Division
5970-A Northwest Highway
Chicago 31, Illinois

Please send me your booklet describing Burgess-Manning Acousti-Booths.

Name _____
Firm Name _____
Street _____ City _____ State _____

For Your Special Information

ALL MAKERS ARE LISTED IEN S-24

It has been necessary to send out a letter to selected Thomas Register advertisers to ask if they are willing to sell their current copies of the Register. This has been done so orders can be filled for other manufacturers who want copies and cannot get them from the completely sold-out edition. The condition is unfortunate of course. At the same time it indicates advisability to place orders now for copies of the 1952 issue available about January first. Such orders are practically certain to be filled. No promise can be made a little later.

BINDER FOR YOUR IEN COPIES IEN S-25

If you want a binder to hold back copies of Industrial Equipment News we suggest that you write direct to Sendor Bindery Inc., 129 Lafayette St., New York 13, N. Y. This company will make up and send you one measuring 16¼ by 11¾ in. to take twelve issues of the paper. Price is $3.10 per binder plain or $3.25 with Industrial Equipment News stamped in gold on the front cover. Please be certain to send your order and check or money order direct to the company. Do not use our reader service form.

IEN ON MICROFILM IEN S-26

For about $3.50 you can purchase the twelve issues of IEN for 1950 on microfilm. The service is available on a yearly basis through University Microfilm, 311-15 N. First St., Ann Arbor, Mich. Each page is printed on 35-mm. film.

INDUSTRIAL ENGINEERING CONFERENCE IEN S-27

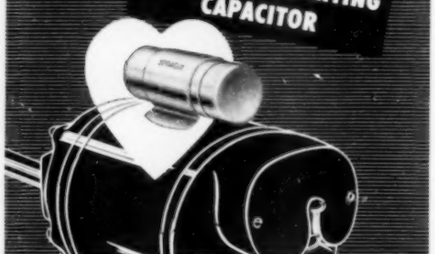
Michigan State College announces its Third Annual Industrial Engineering Conference for September 10 to 15 in East Lansing, Michigan. The meetings are designed to present a picture of the subject in its many phases for company executives and management trainees and to provide opportunity for actual instruction and practice in the use of techniques. Contact Professor James M. Apple, Mechanical Engineering Department, Michigan State College, East Lansing, Michigan, for detail information.

U. S. SAVINGS BONDS IEN S-28

Top Management: *YOUR* BOOST IS NEEDED MOST

BREVITY—Identify by IEN - 8001 if you write the maker

The HEART of the START is a SPRAGUE A-C MOTOR-STARTING CAPACITOR



For day-in, day-out reliability . . . for freedom from costly service and complaints — Specify Sprague A-C motor-starting capacitors!

Available in metal and plastic cases. Capacitance ratings for motors as high as 7½ horsepower. Write for free catalog.

SPRAGUE ELECTRIC COMPANY
North Adams, Massachusetts
PIONEERS IN ELECTRIC AND ELECTRONIC DEVELOPMENT

BREVITY—Identify by IEN - 8002 if you write the maker

New! Low-Cost! Wide-Range!
VARIABLE Speed Sheaves
Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

• Standard V-belts • Automatic belt alignment
• Fixed shaft centers • LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

BREVITY—Identify by IEN - 8003 if you write the maker

NEW TYPE CI

ADJUSTABLE THERMOSTAT

The new Type CI Adjustable Indicating Thermostat is a precise temperature control for gas, liquid, and metal-to-metal applications, such as ovens, hot plate presses, water baths, incubators, proofing cabinets and cold cabinets. It is most useful on units where periodic checks of temperature are required, advisable, or will prove time-saving. The new Type CI is simply and ruggedly built, employing the highly sensitive response action of a solidly liquid-filled bulb and bellows assembly to a snap-acting switch and indicating pointer. The thermostat is adjustable over its entire range by a knurled thumbscrew on the front of the case.

SPECIFICATIONS:
Case 5½ x 5½ x 1¾", Wt. 3 lbs. Standard ranges 50°–350°F and 50°–600°F, special ranges may be had between −120°F and +600°F. Standard differentials ½°F in circulating liquid, 2°F in air. Switch ratings 10 amp 125 V AC and 5 amp 250 V AC. Write for new bulletin No. 4816T which gives full details.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 8004 if you write the maker

CUTS
CORROSION
LOSSES

★ TYGON plastic Paint protects metal, concrete and wood from attack by acids, alkalies, oils, fresh or salt water. Tough, flexible film resists impact. Non-contaminating to solutions.

U. S. STONEWARE
Since 1865 • Akron 9, Ohio

90C

BREVITY—Identify by IEN - 8005 if you write the maker

HARDNESS GRADE DUPLICATION ASSURED

Grinding wheels when tapped by a solid object produce definite musical tones. Every tone or "ring" can be scientifically registered and translated into degrees of hardness. This modern application of physics is utilized to accurately check grinding wheel grade hardness . . . one more important step forward by BAY STATE to more closely duplicate your wheels from order to order.

ADVANTAGES:
- Customer time saver.
- Consistent maximum performance.
- Greater economy.
- Repeat orders duplicated.
- Faster delivery.
- Less trial testing.

BAY STATE

BAY STATE ABRASIVE PRODUCTS CO.
WESTBORO, MASSACHUSETTS
Chicago, Cleveland, Detroit, Pittsburgh • Distributors, All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ontario

BREVITY—Identify by IEN - 8006 if you write the maker

What are U.S. Rubber grinding wheels doing for stainless steel fabricators?

SMOOTHING stainless steel welds on the baffle plates of a textile dyeing tank. Textile materials cross these surfaces at a speed of 125 yards a minute.

As an example, many makers of expensive stainless steel textile dyeing and finishing equipment depend on U.S. *Royalite* and *Vulcanite* Grinding Wheels to help give their products their high state of perfection.

Over 88 years of experience and research in bonds and abrasives stand behind each of the wheels in the U.S. Rubber line. Whatever your grinding problem may be, a "U.S." Wheel can handle it. Write to address below.

PRODUCTS OF
U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION, ROCKEFELLER CENTER, NEW YORK 20, N. Y.

BREVITY—Identify by IEN - 8008 if you write the maker

PACKAGING . . Filling machine weighs dry materials into valve bags

Source: BLACK PRODUCTS CO.
13511-15 Calumet Ave., Chicago 27, Ill.

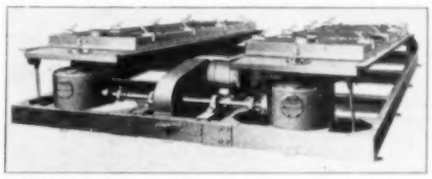
Scale mounted tube extending horizontally from this new machine provides support for a valve bag that is to be filled with dry, granular or powdered material from an overhead supply. The material feeds by means of a hopper and motor-driven screw through a fill tube inside the support tube. When a predetermined amount has been delivered into the bag the weight moves the support tube downward to actuate an electric control circuit. This opens the circuit to the driving motor and feed stops. The company offers to test-fill a given product without obligation and then to recommend application of the machine and guarantee the results.

The support tube is independent of the material-conveying tube housing so weight of the material being handled does not affect its operation. Position of the bag on the support tube does not affect the final weight. An agitator is included in the assembly to prevent material from bridging. A dust-control housing surrounds the filling tube. It can be vented outside or connected to a dust-collecting installation. The machine measures 24 by 45 by 51 inches.

BREVITY—Identify by IEN - 8009 if you write the maker

SCREENING . . Tandem assembly cancels vibration by acting together

Source: PATTERSON FOUNDRY & MACHINE CO.
50 St. George St., East Liverpool, Ohio



Screen surface ranges from 20 by 48 in. to 60 by 120 in. in this new tandem assembly of the company's Gyro-Centric motor-driven screen. Overall dimensions of the largest unit are approximately 13 by 11½ by 2½ feet. Each of the two units is driven by counterbalanced eccentric mechanisms consisting of gears and pinions, eccentric shafts and two counterweights. A common shaft ties the two together so their drive action neutralizes vibration.

Circular shaking action in a horizontal plane distributes the processed material uniformly over the screen surface. Bouncing rubber balls provide a vertical tapping action against the underside of the screen to impart "lift" to the material. A 5-hp. standard motor provides the required power. The screen applies on powdered and granular dry materials.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8010 if you write the maker

PRINTED

Topflight Tape

ADHESIVE

Warning Labels
Parts Numbers
Identification
Instructions

CELLOPHANE-ACETATE-CLOTH-PAPER

The Most Complete Line Available

TOPFLIGHT TAPE CO.
YORK, PENNSYLVANIA – U. S. A.

BREVITY—Identify by IEN - 8011 if you write the maker

MOVING LIQUIDS

with
SPENCER VACUUM

Vacuum pulls liquids uphill—from floors, sump tanks, electrical ducts, pontoons, any height up to six feet.

Any Spencer vacuum cleaner can be used for this purpose, but where large volumes of liquid are to be moved an additional wet separator is recommended. The Spencer Sump-Vac, for instance, is a complete unit which holds 125 gallons of liquid.

In more than 100 ways, sanitation and cleanliness are by-products of the savings in cost of production, when Spencer Vacuum is used. 132 applications are described in Bulletin No. 144.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
4294

BREVITY—Identify by IEN - 8012 if you write the maker

HEVI DUTY
DRY TYPE
TRANSFORMER
complete with
Primary Circuit Breaker
for small
POWER and LIGHTING LOADS

Sizes from 15 to 100 KVA

• Vacuum pressure impregnated coils . . . efficient air chimney ventilation . . . adequate insulation and coil blocking . . . conservative design . . . liberal use of materials . . . removable top cover . . . sheet steel case and easy access to leads are a few of the advantages built into Hevi Duty Dry Type transformers to assure many years of quiet trouble-free service.

Write for bulletin HD-499

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 8013 if you write the maker

140-A Series. Equipped with Roller Bearing Semi-Steel Wheels.

for
heavy loads
hard service
it's Best to Use

Bond
built-for-the-job

40-A SERIES STRUCTURAL STEEL CASTERS

1340-A Series. Equipped with Roller Bearing Solid Rubber Wheels.

Depend on Bond 40-A Series Casters when your service needs require the strength and durability of all-steel construction coupled with easy maneuverability.

The 40-A Series have double ball races. The upper race absorbs all side shock; the lower race absorbs the vertical load. These casters are pressure lubricated for frictionless operation—stand up best, keep costs way down.

Write today for Bond Catalog K-38. It gives complete information on all Bond Casters.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

BREVITY—Identify by IEN - 8014 if you write the maker

"I doubled the output of an old furnace!"

A manufacturer made that statement after relining an old annealing furnace with B&W Insulating Firebrick. Then he added, *"I cut my fuel bill on each heat by 25% besides!"*

No matter what kind of furnace you operate, you, too, can probably save money with these lightweight refractories. Here's how:

B&W Insulating Firebrick store and conduct less heat than any other firebrick in their class. They reach operating temperature quickly . . . reduce cycle time and fuel costs . . . stay on the job longer.

Check the operating and maintenance savings you can make with B&W Insulating Firebrick. Write today for Bulletin R-2-H containing complete technical data.

THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
85 LIBERTY STREET, NEW YORK 6, N. Y.
WORKS: Augusta, Georgia R-403

BREVITY—Identify by IEN - 8015 if you write the maker

Adaptable Pumps for "BUILT-IN" Use

Here's your ready-made answer to machine design problems involving individual lubrication of machine units. Brown & Sharpe Automatic Reversing Vane Pumps offer simplified design that assures easy accommodation to varied applications. Automatic feature maintains same direction of flow when rotation is reversed.

Stripped models available both with and without housings in three sizes: 2½, 5, and 11½ gpm at 0 lbs. pressure and at 1140 rpm. Write for complete catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

We urge buying through the Distributor

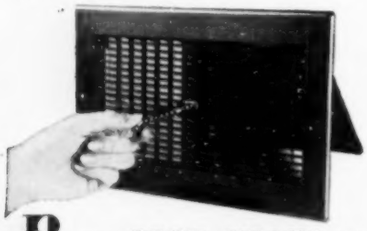
BROWN & SHARPE BS

BREVITY—Identify by IEN - 8016 if you write the maker

No "Or Equal" for PULLS

BEAD CHAIN has long been the preferred pull chain among designers. For light duty on items like lamp sockets and fans, or heavy load pulls on large dampers, ventilators, venetian blinds, etc., the superiorities of Bead Chain are many:—

It is strong yet light and attractive. Free-running, even over small sheaves . . . can't kink, bind or jam because every bead is a swivel. Highly adaptable . . . 5 bead sizes, various metals and finishes, and *the widest choice* of attachments for coupling, splicing, hooking, doubling, etc. Submit your "pull problem"—Bead Chain engineers will solve it.



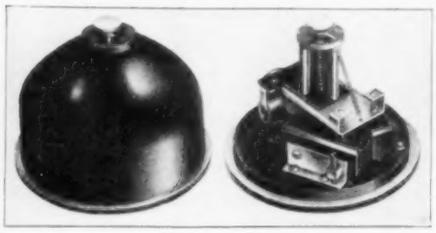
The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.

Manufacturers of: BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products; **MULTI-SWAGE** — the most economical method of producing small tubular metal parts for electronic and mechanical applications.

BREVITY—Identify by IEN - 8017 if you write the maker

THERMOSTAT . . Bellows type unit for use in radiant panel control

Source: SARCOTHERM CONTROLS INC.
2922 Empire State Bldg., New York 1, N. Y.



New Comfortstat consists of a bellows, temperature-adjusting screw, two Micro switches, all assembled on a nickel-plated mounting base for application on a standard 3½-in. octagon outlet box. The mechanism is enclosed inside a copper hood finished in black lacquer.

The unit is sensitive to changes in effective temperature from its mounting position on a wall or ceiling to control operation of hot water or electric radiant heating panels. It measures 4¾ in. in base diameter by about 3½ in. in height. Contact rating is 10 amp. on 110-volt ac. Thermoray is the trade name of the new control assembly.

BREVITY—Identify by IEN - 8018 if you write the maker

HEATING . . Electric element assembly heats a 70 in. plastic extruding die

Source: THERMEL INC.
3438-42 W. Lake St., Chicago 24, Ill.

New application for the company's electric heating elements is shown in the illustration in which nine assemblies of elements cast in bronze are employed on the die and on the throat assembly between the die and an extruding machine for plastics. The elements hold the die at 800 deg. F. while processing at the rate of 300 lb. of material per hour. The application is representative of special designs the company is prepared to manufacture and supply.

BREVITY—Identify by IEN - 8019 if you write the maker

TESTING . . Data on viscosity meter supplied as kit of printed information on the subject

Brookfield Engineering Laboratories Inc.
235 Porter St., Stoughton, Mass.

Information on the company's viscometer and on the general subject of viscosity is included in new "Brookfield Viscosity Packet." It consists of an 8-page catalog on four models, a list of technical article reprints which the company will supply on request, an adapter sheet, price sheets.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8020 if you write the maker

READINGS AT A GLANCE

for BOTH AC and DC

Instant Current Measurements Without Breaking Circuit or Insulation . . .

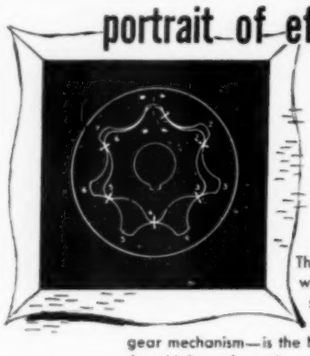
You can read 'em fast and accurately with the Columbia Tong Test Ammeter by merely clamping the tongs around the electrical conductor. Tong Test is the only instrument of its type that can measure both AC and DC. Cannot burn out for it has no windings. Safe, convenient and light in weight. Interchangeable scale ranges up to 1000 amperes. Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½". Voltage readings, too, with the Voltor Attachment.

Write for Tong Test Bulletin IQ-400

COLUMBIA **COLUMBIA ELECTRIC MFG. CO.**
4519 Hamilton Ave., Cleveland 14, Ohio

BREVITY—Identify by IEN - 8021 if you write the maker

portrait of efficiency



The unique device whose likeness you see here — the famed Gerotor gear mechanism—is the No. 1 reason for the high volumetric and mechanical efficiency of Gerotor Hydraulic Pumps. Revolving in the same direction at low relative speed, the two Gerotors wear less — last longer — assure more uniform flow. Pressures to 1200 p.s.i. continuous, 1500 intermittent.

GEROTOR
hydraulic pumps
GEROTOR MAY CORPORATION, Baltimore 3, Md.

BREVITY—Identify by IEN - 8022 if you write the maker

even a surge to full atmosphere can't hurt this team..

The Philips gauge tube *contains a loop anode maintained at 3-kv d-c potential and permanent magnets to compress the electron paths. Its positive ion current is a measure of pressure over the range from .02 to 25 microns Hg.*

The thermocouple gauge tube *contains a junction to which heat is supplied at constant rate. Its temperature depends on heat loss by gas conduction, and is therefore a measure of pressure. It covers the range from 1 to 1000 microns Hg.*

DPi has combined the thermocouple gauge and the Philips gauge into a single instrument that's low in price, requires no special operating precautions, and covers the entire range from 2×10^{-5} mm. to 1 mm. Hg on a single meter.

The combination circuit uses three readily available radio tubes and three selenium rectifiers. It operates from any 115-v a-c outlet. No panel adjustments are necessary. All the operator does is turn it on and read the pressure. It can be calibrated, if needed, from the outside of the 10" x 8" x 8" cabinet. It's easily portable and requires no precautions against any pressure surges, even up to atmosphere.

The new Combination Thermocouple and Philips Gauge is one more step in DPi's continuing program to make high vacuum simple and inexpensive to create, measure, and use. We'll be glad to discuss your requirements in detail and quote specific prices. Simply write to: ***Distillation Products Industries,*** Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

high vacuum research and engineering

DPi

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 8024 if you write the maker

THE HI-GAIN Industrial POCKETSCOPE BY WATERMAN
MODEL S-14-A ®

Identified by its hi-sensitivity and incredible portability, S-14-A POCKETSCOPE now permits "on-the-spot" control, calibration and investigation of industrial electronic, medical and communications equipment. Direct coupling without peaking, used in the identical vertical and horizontal amplifiers, eliminates undesirable phase shifting. Designed for the engineer and constructed for rough handling.

Wt. 12¾ lbs. 12" x 5¾" x 7"

Vertical and horizontal channels: 10mv rms/inch, with response within—2DB from DC to 200KC and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization from ½cps to 50KC with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 23, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:
S-10-B GENERAL POCKETSCOPE
S-11-A INDUSTRIAL POCKETSCOPE
S-14-B WIDE-BAND POCKETSCOPE
S-15-A TWIN TUBE POCKETSCOPE
S-21-A LINEAR TIME BASE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC® TUBES and other equipment

WATERMAN PRODUCTS

BREVITY—Identify by IEN - 8025 if you write the maker

Keg handling . . .
Stacking, Storing
NOW MADE EASY

with
PHILLIPS
Keg Pallets
and Covers

A practical solution to the problem of handling, stacking, and storing kegs, this unit includes a strong steel pallet and a steel cover for protecting the kegs and their contents. Easily handled by a fork lift truck, the all-welded pallet will accommodate six standard kegs on its slightly recessed 28" x 42" deck. Steel bands hold the cover on during transporting.

WRITE FOR BULLETIN TODAY

MANUFACTURERS SINCE 1861 PHILLIPS WIRE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

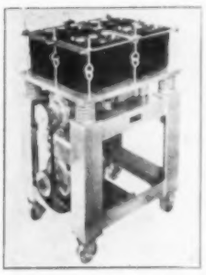
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET · PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 8027 if you write the maker

TESTING . . Motor driven vibrator for destructive product testing

Source: DEISTER MACHINE CO.
1931-35 E. Wayne St., Fort Wayne 4, Ind.



New application for the company's centrifugal vibrating mechanism, employed initially on its line of vibrating screens, imparts vibrating movement to a test product anchored to a plate. Vibration is produced by two pairs of unbalanced flywheels rotating at 1,800 to 2,000 rpm. with V-belt connection to a driving motor in the machine base.

The assembly is mounted on casters. The motor rates 1 hp., is anchored on a hinged plate to take up belt stretch. Overall dimensions are 20 by 24 by 32 inches. Amplitude of vibration can be adjusted as required by test conditions.

BREVITY—Identify by IEN - 8028 if you write the maker

STEEL . . Iron silicon alloy, 12⅜ in. width and 4 mil thickness

Source: ARMCO STEEL CORP.
701-5 Curtis St., Middletown, Ohio

Workability is excellent

Tran-Cor T-O-S is a new electrical steel processed and selected for high permeability. It has a density of 7.65 gm. per cc., a volume resistivity of 282 ohms per mil-ft. and a lamination factor of 95 per cent solid.

Applications are in wound-type transformers and reactors operating at 400 cycles. It is particularly useful in reduction of weight and size for airborne electrical equipment. Minimum permeability at 18 kilogausses is 1,800.

BREVITY—Identify by IEN - 8029 if you write the maker

MARKING . . Motor driven dispenser delivers self-adhesive labels from roll

Source: AVERY ADHESIVE LABEL CORP.
1614-18 S. California St., Monrovia, Calif.

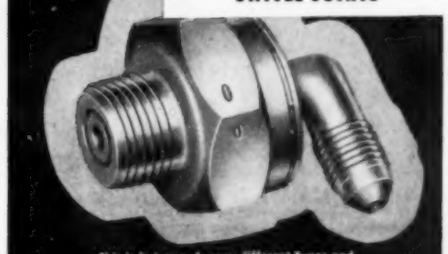
Delivery speed is adjustable between 10 and 150 ipm. in this new motor-driven Model E-350 dispenser for the company's Kum-Kleen self-adhesive labels. The machine and the labels, the latter mounted on a roll of backing tape, are supplied together with as many additional rolls as may be required for a production marking operation on given work.

Action is started and stopped by foot or finger movement and adjusted for any speed within the overall range. The housing measures about 6½ by 7 by 14 inches. Maximum width of the label-delivery slot is 3 inches. Each label issues through this slot, stripped from the roll ready for application. Operation is on 110-volt ac. or dc.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8030 if you write the maker

CHIKSAN
HYDRAULIC SWIVEL JOINTS



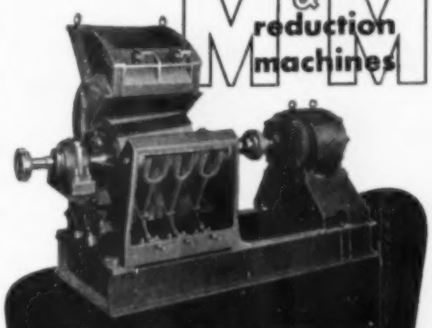
This is but one of many different Types and Styles of CHIKSAN Hydraulic Swivel Joints for application on all hydraulic lines which must turn or swivel. Pressure capacities range from 1000 psi. to 3000 psi. Write for Bulletin A. Or tell us your requirements and CHIKSAN Engineers will gladly cooperate with you in developing Hydraulic Swivel Joints to meet your requirements.

CHIKSAN COMPANY
AND SUBSIDIARY COMPANIES
Chicago 3, Ill. BREA, CALIFORNIA Newark 2, N. J.
WELL EQUIPMENT MFG. CORP. HOUSTON 1, TEXAS
CHIKSAN EXPORT CO. BREA, CALIFORNIA NEWARK 2, N. J.

BALL-BEARING SWIVEL JOINTS FOR ALL PURPOSES

BREVITY—Identify by IEN - 8031 if you write the maker

M&M reduction machines

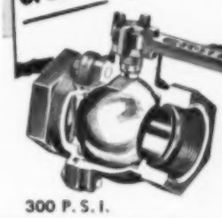


M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 8032 if you write the maker

does the job better!



ROCKWOOD ball VALVES

300 P. S. I. WORKING PRESSURE

The most dependable and efficient performing Valve on the market. Every Rockwood Valve is designed and built to give you longer and more economical service.

The full round flow — leak proof service — quick opening and closing features of the Rockwood Ball Valve give you better and faster service with no maintenance. When you install a Rockwood Valve on the line, it does the job better.

For use in oil refineries, food, paper, textile, chemical and rubber plants, etc. Write for sizes and prices and for bulletin V-4.

Distributors in all principal cities.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 1, MASS.

BREVITY—Identify by IEN - 8033 if you write the maker

Clow CAST IRON PIPE for EXPANSION OR REPLACEMENT IN PLANTS . . . NEW BUILDINGS

Leading engineering firms specify Clow "IPS"* Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities.

"IPS" Pipe permits speedy installation with minimum disruption of work. It can be cut and threaded with ordinary tools of the piping trade.

Either plain or threaded ends: 18 foot lengths, sizes 3, 4, 5, 6, 8 and 10 inches . . . *Or* with integral calking hub, other end plain: 18 foot lengths, sizes 4, 6 and 8 inches.

* "IPS" means Iron Pipe Size, having the same outside diameter as steel or G. W. I. pipe.

Write for Form 4-26-50.

JAMES B. CLOW & SONS
201-299 North Talman Avenue Chicago 80, Illinois

WHOLESALE DISTRIBUTORS OF PIPE, VALVES AND FITTINGS FOR INDUSTRIAL USE

BREVITY—Identify by IEN - 8034 if you write the maker

New JENKINS VALVES for Safety and Economy in L.P.G. SERVICES

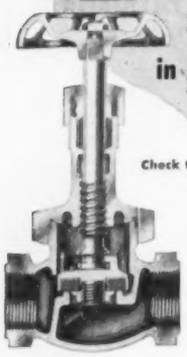


Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

Check these special design features

- **Extra heavy, reinforced body** — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- **Crowned seat** — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- **Improved composition disc** — meets every test of L.P.G. service.
- **Deeper packing box** — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- **All other parts specifically designed** and proportioned to meet rigorous requirements of critical L.P.G. service.

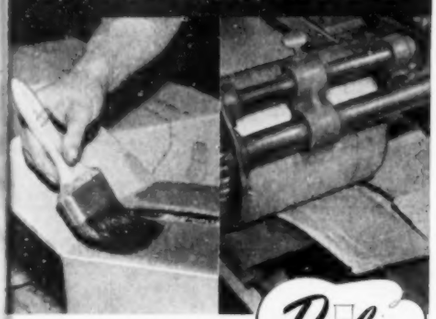
Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

BREVITY—Identify by IEN - 8035 if you write the maker

Seal CASES IN 20 SECONDS!



Paisley SCIENTIFIC ADHESIVE SERVICE

BOXEAL is the new *fast setting* Shipping Case Glue which tears fibres 15 to 20 seconds after application by brush or machine. Brings new high speed and efficiency to all production lines where short pressure time is essential. BOXEAL permanently seals all types of shipping boxes, corrugated, Fourdrinier kraft, jute, solid fibre. Non-toxic, odorless, stainless, and most of all . . FAST SEALING!

Get our complete laboratory report on Paisley BOXEAL and take advantage of the offer to send a trial 5 gallon shipment at the 55 gal. drum price available to all drum users of shipping case glues. We'll ship ON APPROVAL, F.O.B. our nearest plant, New York or Chicago. Fill in the coupon below, attach it to your letterhead, and mail it to us TODAY.

FILL IN & MAIL COUPON NOW FOR GENEROUS TRIAL OFFER

Gentlemen: Please send complete information about Paisley BOXEAL Shipping Case Glue.

☐ You may send, on approval, trial 5 gal. shipment of "BOXEAL" at 55 gal. drum price.

☐ Send me a copy of Laboratory Report on "BOXEAL".

FIRM _____

STREET _____ CITY _____

BUYER _____

PAISLEY PRODUCTS INCORPORATED

Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products

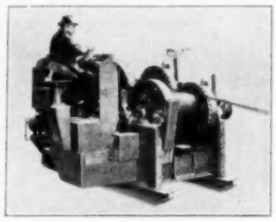
1770 CANALPORT AVE., CHICAGO 16, ILL. • PHONE CANAL 6-2215

630 W. 51st STREET, NEW YORK 19, N. Y. • PHONE COLUMBUS 5-2880

BREVITY—Identify by IEN - 8037 if you write the maker

HOIST . . Two drum assembly has single line pull to 25,000 pounds

Source: AMERICAN HOIST & DERRICK CO. 61 S. Robert St., St. Paul 1, Minn.



Engine drive is shown in the illustration of the company's new Iron Workers' Special, a new two-drum hoist designed particularly for steel erection. A third drum and a derrick swinger can be added to specification, by the company or later in the field. Three models rate 14,000 to 25,000 lb. in single line pull.

Drive transmission includes a torque converter. Control centers at air-operated contracting-type tandem band clutches. Safe operation is assured by a back-up brake which engages upon reversal of the drive shaft. Forged-steel ratchet rings with compression-type dogs and overload regulating air valves permit clutch slippage in case a load becomes "snagged" or "hung up" while being hoisted. The operator and his controls are located on a central stand raised above the general assembly and designed so the stand can be positioned in line with or at right angles to the drums.

BREVITY—Identify by IEN - 8038 if you write the maker

STERILIZING . . Ultra-violet unit to purify contaminated water supply

Source: SEPCO CORP. 858-62 Cross St., Pottstown, Pa.

New sterilizer consists of a stainless-steel tank measuring 12 in. in diameter by 72 in. in height and four ultra-violet tubes lying parallel to the long axis of the tank between a pair of headers. Control equipment for the tubes is mounted in a compartment above the top header. Baffles guide the water passing through the unit so it flows close to the tubes to expose all portions to the bacteria-destroying radiation. Capacity is 400 gph. Several units can be used in parallel for greater capacities if required by the installation.

BREVITY—Identify by IEN - 8039 if you write the maker

ENGINEERING . . Directory of consultants in the field of chemistry and chemical engineering

Assoc. Consulting Chemists & Chemical Engineers Inc. 50 E. 41st St., New York 17, N. Y.

"Consulting Services", 13th Edition, is a 136-page book which will be sent you upon letterhead request while the supply lasts. It classifies member firms by their field, describes scope of each member's service, lists members alphabetically by name and by geographical locations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8040 if you write the maker

A few turns will do it!...

BUCKINGHAM... Thread RESTORERS

Just slip on, tighten and turn. That's all there is to it—it's that simple . . . and quick . . . And what *results!*

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads —when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from ¼" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

6103 —	¼" to 1" root diam.	$ 6.50
6203*—	¼" to 1" root diam.	8.50
6104 —	1" to 2 5/16" root diam.	12.00
6106 —	2" to 4" root diam.	27.50
6204*—	1" to 2 5/16" root diam.	21.00

*Short swing type.

BUCKINGHAM MANUFACTURING CO., INC.

49-51 Travis Street Binghamton, N. Y.

BREVITY—Identify by IEN - 8041 if you write the maker

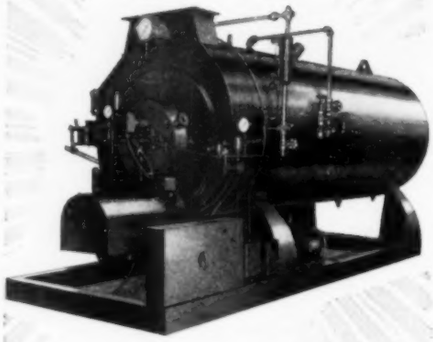
fluid POWER FOR CRANES HOISTS AND MONORAILS

Propel loads up to 5 tons on monorails or cranes with the compact Calabar fluid Tractor. It travels at speeds ranging from 50 to 250 FPM . . . is applicable to flat or tapered track from 2" to 6¼" . . . starts smoothly without jerking or swinging the load . . . is practical on curves and inclines. Wearing parts are totally enclosed and operate in oil bath. Pendant push-button controlled. Built in ½ & ¾ H P sizes. Dealers everywhere.

CALABAR CORP. South Gate, California

BREVITY—Identify by IEN - 8042 if you write the maker

YEARS AHEAD in Steam Generation



CYCLONIC COMBUSTION!

The slogan "Years Ahead in Steam Generation" is *Not* just an advertising phrase but is a statement of fact.

The truly amazing method of Cyclonic combustion has been proven successful by U. S. Industry and again by the Armed Services.

Full power operation from a cold start in 15 to 20 minutes. Savings up to 50% on maintenance. Great fuel operational savings.

Details of these and many other facts regarding Cyclotherm generators are available by writing Dept. J.

Boilers are designed for oil or gas operations from 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

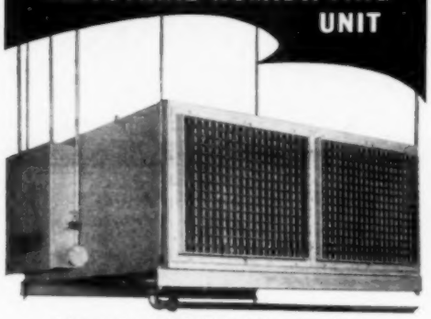
see our CATALOG in SWEET'S FILE ARCHITECTURAL

CYCLOTHERM STEAM GENERATORS

OSWEGO, NEW YORK

BREVITY—Identify by IEN - 8044 if you write the maker

INDUSTRIAL HUMIDIFYING UNIT



Bahnson Type BA-2 Humidifier—completely self contained, including fans, motors, humidifiers, 4-way adjustable grilles, and automatic humidity control. Requires only power supply line, water supply and drain lines for installation. Eliminators remove excess free moisture. Delivers approximately 4000 CFM and evaporates up to 10 GPH.

The Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

BREVITY—Identify by IEN - 8045 if you write the maker

you GO with OHIO GREEN

WORLD'S FINEST SLITTER KNIVES AND SHEAR BLADES made in OK Battle Axe, OK Dura Chrome and OK Standard.

The cutters shown are used on gang slitters — side trimmers and for tin plate. They are held to ± .00025 tolerances and are given an extremely high finish. Closer tolerances can be furnished on request.

We also furnish hardened and unhardened spacers with the same close tolerances and high finish as the slitters.

The large shear blade shown is furnished in the above three grades for shearing any type of metal and are made to fit any machine. Send us your inquiries giving quantities and sizes.

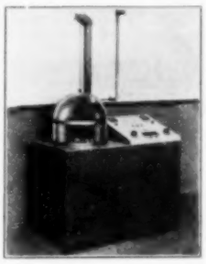
OK ROTARY SHEARS-BLADES are designed to give maximum service — tough as they come!

OHIO KNIFE Co. CINCINNATI 23, OHIO
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES

BREVITY—Identify by IEN - 8047 if you write the maker

PROCESSING . . Vacuum equipment for production and laboratory use

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.



Type EMV-5 designates new vacuum equipment for applications such as evaporation of metals and salt, sputtering, vacuum distillation, drying, preparation of specimens for electron microscopy, study of discharges in gases at low pressure, study of phosphors under electron and ion bombardment, study of electrical and physical properties of materials at low pressures and in various atmospheres, vacuum coating of items such as mirrors, lenses, vacuum tubes and plastic objects, all on a production basis. The assembly stands 45 in. in width, 26 in. in depth and 77 in. in height overall including the bell-jar hoist. Weight is about 600 lbs. and operation is on 110-volt 60-cycle ac. with input at 2,500 watts.

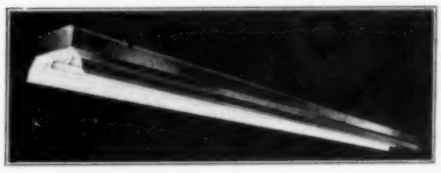
A mechanical pump and an oil-diffusion pump draw air out of the vacuum chamber to 0.1 micron of mercury in about seven minutes. A cold-cathode discharge gage measures pressure in the chamber. Nine terminals are mounted on the baseplate which is covered by the 18 in. bell jar to serve three different functions. Three pairs of terminals are connected to a low-voltage high-current power supply and are used to connect filaments so they can be heated for the evaporation of materials.

A fourth terminal is connected to a high-voltage low-current source for ionization clean-up of the vacuum chamber and for metal sputtering. The two remaining terminals connect directly to a pair of jacks on a control panel to make electrical measurements inside the bell jar or to introduce auxiliary sources of power when desired.

BREVITY—Identify by IEN - 8048 if you write the maker

LIGHTING . . Fluorescent fixture takes two 96 in. Slimline lamps

Source: MITCHELL MFG. CO.
2523-27 N. Clybourn, Chicago 14, Ill.



Lag-lead balance in this new fluorescent fixture corrects for stroboscopic effect and suits the fixture for operation in areas where high-speed machinery is at work. The fixture is made of 20-gage steel with an 8-ft. body channel and a reflector in two 4-ft. sections to assist in cleaning. Channel and reflector exterior are finished in baked heat-resistant gray enamel. The reflector has a glossy white-enamel finish.

Suspension can be individual or in continuous rows. Push-type single-pin lampholders secure the lamps. The fixture is wired ready for connection to a 110-volt 60-cycle ac. line.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8049 if you write the maker

Handles ANY Job Requiring a Baked Finish

Despatch FINISH BAKING OVENS

Minneapolis-Honeywell Regulator Company operates a number of Despatch Ovens for various jobs. The operator running the above RS-4 Electric Finish Baking Oven, for baking finishes on relay cases, is particularly enthusiastic. He likes the accurate temperature control, ease of loading and avoidance of heat loss. He figures that the RS Oven, installed in 1946, paid for itself years ago through the saving in drying time. Does your operation require controlled, uniform heat up to 500°?

Write for the Despatch RS Bulletin.

DESPATCH OVEN CO. Established in 1921

Manufacturers of ovens for: Paint Finishing . . Dehydrating . . . Curing . . . All Industrial and Laboratory Applications.

337 DESPATCH BLDG., MINNEAPOLIS 14, MINN.

BREVITY—Identify by IEN - 8050 if you write the maker

D-C power supplies for 10,000 to 1,000,000 volts and higher

Typical 65-kv power supply.

Manufacturers and developers of high-voltage equipment are invited to take advantage of General Electric's extensive experience in building power supplies for such diversified applications as:

Food Processing • Precipitation, separation and paint spraying • Nucleonics • Radar, radio and X-ray • Research and development laboratories.

Standard ratings range from 10 to 1000 kv with current ratings from 7.5 to 1000 ma. Higher ratings can be built to specifications. Inquiries should include any limiting dimensions and functional requirements such as voltage range, per cent accuracy, and allowable ripple. Address Room 43-328A, Apparatus Department, General Electric Company, Pittsfield, Mass. 431-90

GENERAL ELECTRIC

BREVITY—Identify by IEN - 8051 if you write the maker

Mueller Climatrol

space-saving gas-fired unit heaters (propeller fan or blower types)

Proof of SUPERIORITY is here

1. One-piece all-welded steel heat exchanger — no tie-rod, bolted, gasketed, or slip joints to leak, separate or crack.
2. Uniform air flow and heat distribution — burner extends under entire heat exchanger; insures maximum fuel economy.
3. High Crown Sheet — no flame impingement, no hot spots.

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. 8-44

Write for full details —

L. J. Mueller Furnace Co.
2040J W. Oklahoma Ave.
MILWAUKEE 15, WISCONSIN

BREVITY—Identify by IEN - 8052 if you write the maker

Simplify Die Design . . . Specify DANLY® DIE SPRINGS

Two complete size ranges . . designed for medium pressure —high deflection or high pressure—medium deflection . . . meet specific die making needs more exactly! Write today for complete information. Ask for the Danly Die Spring Folder.

SEND FOR YOUR COPY TODAY

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois
PRECISION DIE SETS . . . TOOL, DIE AND GAGE MAKERS SUPPLIES

BREVITY—Identify by IEN - 8053 if you write the maker

Handy New Catalog!

20 pages

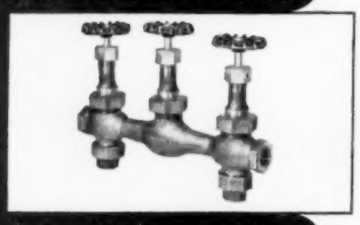
• *Data* on instrument ball bearing dimensions, load ratings, tolerances, mounting, etc. *Information* on instrument ball bearing standards. *Illustrations* of typical instrument bearing applications. Send for copy of Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 8054 if you write the maker

The Compactness of HONEYWELL BY-PASSES



will simplify your piping

The Honeywell By-Pass is a compact, neat, easily-installed means of by-passing control valves, traps and other pressure units. It simplifies piping arrangements by eliminating a multitude of joints, nipples and elbows . . . by using a minimum of space . . . by saving time . . . by minimizing maintenance.

Available in Bronze as follows: sizes ½ to 2 inches . . . Bronze or Stainless trim . . . union bonnet . . . screwed ends . . . 150-300 lbs. . . . from $21 to $116. Available in Cast Steel as follows: 1 to 2 inches . . . union bonnet for 1" and 1¼", bolted bonnet for 1½" and 2" . . . Stainless trim . . . screwed or flanged ends . . . 300-600 lbs. . . . from $228 to $426. Send in your order, today!

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

BREVITY—Identify by IEN - 8055 if you write the maker

SECO Varicell

STABILIZED-REGULATED VARIABLE D-C VOLTAGE FROM AN A-C SOURCE

VARICELL holds output to any value from 0-30 VDC regardless of line variations from 95-135 VAC and automatically compensates for load changes. R.M.S. ripple voltage does not exceed 0.1 volt. Output current is 15.0 amperes.

THE SUPERIOR ELECTRIC COMPANY
1208 CHURCH ST., BRISTOL, CONNECTICUT

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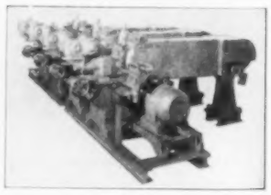
TITLE _____
COMPANY _____
CO. ADDRESS _____
CITY _____ ZONE _____ STATE _____

CONSULT SECO ON YOUR VOLTAGE CONTROL PROBLEMS

BREVITY—Identify by IEN - 8056 if you write the maker

POLISHING . . Abrasive belt machine, centerless, for work to 4 in. diameter

Source: PRODUCTION MACHINE CO.
410 Wels St., Greenfield, Mass.



Welded tube stock, such as that used in furniture manufacture, can be polished and buffed on this new 4-station assembly of the company's Type-101 centerless polishing machine at the rate of 70 fpm. Three of the stations are equipped with abrasive belts and back stands. The fourth station drives a buff for the final operation. The machine supplements the two-station assembly previously described IEN-741-51. Floor space measures about 56 by 111 inches. Overall height is 47 inches. Work capacity is from ¼ to 4 in. in diameter.

The machine takes belts to 6 in. in width by 168 in. in length. It mounts polishing wheels from 10 to 16 in. in diameter and provides a spindle speed of 2,088 rpm. Recommended motor is a 10-hp. unit operating at 1,800 rpm. It connects to the drive by V-belts. A ¾-hp. Vari-Drive motor is employed for the variable-speed feed drive which can be adjusted to a maximum of 100 lineal feet per minute.

BREVITY—Identify by IEN - 8057 if you write the maker

CRANE . . Hydraulic equipment mounts on 1½ ton or larger truck

Source: BADGER MACHINE CO.
51 Front St., Winona, Minn.

Load capacity for this new hydraulic crane is 1,500 lb. on a 15-ft. radius. Lift height is maximum at 23 feet. The unit weighs 2,200 pounds. It mounts on a 1½-ton or larger truck with power take-off to its hydraulic pump from the truck engine or with an individual gasoline engine of its own.

Hydraulic cylinders elevate and lower the boom, operate the load line and swing the boom through a 180-deg. arc. Controls are grouped at the operator's position. Hopto "TM" is the trade name of the new crane assembly.

BREVITY—Identify by IEN - 8058 if you write the maker

CORROSION PROOFING . . Technical information on how to finish castings by a variety of methods

Gray Iron Founders' Society Inc.
210-A National City-E 6th Bldg., Cleveland 14, Ohio

Surface finish types, properties, application are described in new 76-page booklet, "Metallic and Non-Metallic Coatings for Gray Iron". List price is $1.25 to members, $1.75 to non-members. Metallic types included sprayed, hot-dipped, hard facing, diffusion, plated finishes. Non-metallic types are paints, lacquers, vitreous enamel, conversion coatings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

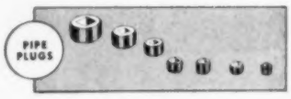
BREVITY—Identify by IEN - 8059 if you write the maker

TOUREK
BALL JOINTS • PIPE PLUGS AND QUALITY SCREW MACHINE PRODUCTS

Tourek's quality Ball Joints meet exacting requirements. Simplified design, improved performance, and lower costs result from specifying Tourek Ball Joints . . . the only recognized standard. Large stocks assure prompt delivery.

Tourek's precision countersunk steel pipe plugs are accurate, high strength, and economical—resulting in the highest quality at costs which are competitive to old style plugs.

Stock sizes, available with National Pipe or Dry-Seal threads are ⅛", ¼", ⅜", ½", ¾" and 1". Also available on special order in alloy steels, aluminum or brass in sizes up to 2⅝" diameter.



Modern high speed single and 6-spindle automatics—together with complete secondary equipment, including grinding and honing—plus 50 years' experience, assure you "The Best in Quality Screw Machine Products."

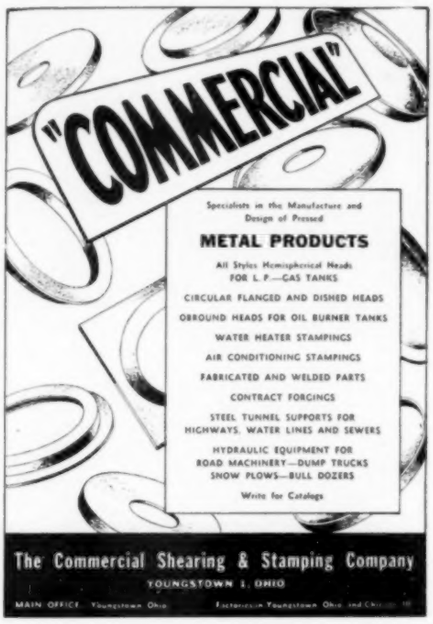
Your requirements, up to 2⅝", are made with utmost precision, and with prompt delivery assurances.

LITERATURE
Comprehensive data on any or all Tourek products sent promptly upon request . . . write for yours now. J. J. TOUREK MFG. CO. 4701 W. 16th St., Chicago 50, Ill.

TOUREK
"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1930

BREVITY—Identify by IEN - 8060 if you write the maker



The Commercial Shearing & Stamping Company
YOUNGSTOWN 1, OHIO
MAIN OFFICE Youngstown, Ohio Factories in Youngstown, Ohio and Chicago, Ill.

BREVITY—Identify by IEN - 8061 if you write the maker

Immediate Shipment

TRANSALL Heavy Duty Pre-Lubricated Idlers for Belt Conveyors

Manufacturers of a full line of Idlers and complete Belt Conveyor Systems for hauling any type of bulk material.

Troughing Idler

Compare!	Lubricated Idlers	TRANSALL Pre-Lubricated Idlers
Lubrication—Labor	Yes	NONE
Lubricant Cost	Yes	NONE
Belt Damage by Grease	Frequent	NEVER
Friction Factor	High & Variable	LOW & Constant
Grease Fittings	Costly	NONE

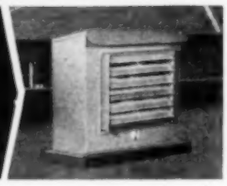
TRANSALL INC.
117 North 11th St. Birmingham 4, Ala.

BREVITY—Identify by IEN - 8062 if you write the maker

BREVITY—Identify by IEN - 8063 if you write the maker

EFFECTIVE VENTILATION

through ROOFS with Peerless Electric PENTHOUSES



• An ideal ventilator for factories, laundries, stores, auditoriums and similar buildings.

Economical Weathertight AUTOMATIC SHUTTERS

8 SIZES

12" to 48"

Peerless Electric fans can be furnished for all sizes of these penthouses.

Write for complete specifications

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Established 1893 • WARREN, OHIO

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BREVITY—Identify by IEN - 8064 if you write the maker

REWIRE WITH

National Electric

METAL MOLDING & FLORDUCT RACEWAYS

THE MODERN METHOD OF WIRING

in factories...offices...stores...schools

Accessible, Streamlined Electrical Raceways For Every Building Structure

All NE Surface Raceways are two piece—base and capping—designed on the "lay-in" principle—

- **Lay in the wires, snap on the capping.**
- **No fishing required.**
- **Installation, additions and changes are quick and easy.**

All approved by Underwriters' Laboratories, Inc.

Steel for permanence—
Grounded for Safety

SOLD THROUGH ELECTRICAL WHOLESALERS

Write for additional information.

EVERYTHING IN WIRING POINTS TO

National Electric
PRODUCTS CORPORATION
1352 CHAMBER OF COMMERCE BUILDING
PITTSBURGH 19, PA.

BREVITY—Identify by IEN - 8066 if you write the maker

BENDING . . Motor driven press rates mild steel to 3/16 in. by 8 ft.

Source: STRUTHERS WELLS CORP.
1001-5 Pennsylvania Ave., Warren, Pa.

New press with 100-ton rating for forming, bending, blanking and punching has been added to the company's line of motor driven press brakes. The construction is featured by the clutch and brake which operate simultaneously to stop the ram at any desired position for precision push-button control. The connecting screws are provided with micrometer adjustment and scale indicators.

The eccentrics are carried in bearings backed up against the press frame for straight-line pressure application within the area of the press frame itself. Shafts are mounted in anti-friction bearings operating in oil in the enclosed housing.

BREVITY—Identify by IEN - 8067 if you write the maker

LUBRICATING . . Equipment parts in kit assemblies to stock for repair

Source: C. A. NORGREN CO.
220-24 Santa Fe Drive, Denver 9, Colo.

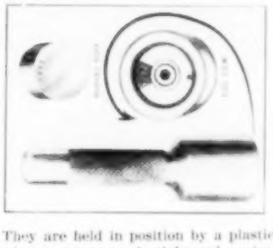
Identifying list on request

The company has assembled selected repair and conversion parts for its various designs of air-operated lubricators and air regulators. There are 20 of the new kits, each identified for certain units of the lubricating equipment. Each contains from 4 to 11 new parts with repair or conversion instructions and section drawings. The kits can be purchased for stock against the day they are needed to maintain the lubricating equipment in operating order.

BREVITY—Identify by IEN - 8068 if you write the maker

MARKING . . Steel type holder marks the ends of circular work

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.



Model SH-15 is a new curved-line holder made of the company's Meeco steel that resists spalling or mushrooming. Type can be specified in removable arrangement in a partial or complete circle employing special taper-sided pieces. They are held in position by a plastic insert which expands when a set screw is tightened against it. Each assembly is made for given requirements with specified numbers, characters or symbols depending upon the application.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8069 if you write the maker

For Faster, Smoother Painting

EDWARD E. ROBINSON

MASTER PAINTER BRUSHES

SPEED up maintenance or production painting by using Robinson's *TIPPED* nylon Master Painter Brushes. Every nylon filament is *TIPPED* on Robinson's newly developed nylon *TIPPING* machine assuring superior paint pick up and smoother, faster lay down by every Robinson *TIPPED* Nylon Master Painter brush.

Robinson's Master Painter Brushes made of Pure Bristle, Bristle-horsehair, or *TIPPED* Nylon, mixed to performance proved formulas are available through Distributors, Paint and Oil Dealers and Hardware stores. Catalogue mailed on request.

EDWARD E. ROBINSON
INCORPORATED
95 PARK AVENUE • NUTLEY 10, N. J.

BREVITY—Identify by IEN - 8070 if you write the maker

ELLIOTT TWIN STRAINERS

TYPE "A"

You always know which chamber is working!

■ The valve shaft is your indicator. When it protrudes from the gland, covering the valve screw, the near chamber is shut off. When it is hidden by the gland, the farther chamber is closed. It is as simple as that . . . This valve shaft, with internal thread completely protects the valve screw. No liquid being strained ever touches the valve screw threads, assuring constant lubrication and long life.

Get all the story. Write for the Type A Twin Strainer Bulletin.

SIZES FROM 1-UP—125 to 250 lb. PRESSURES

A-312

ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 8071 if you write the maker

Polish Up Now On Set-Up Wheels!

This 48-page booklet, prepared by Norton abrasive engineers, shows you how to get the most out of your metal polishing set-up wheels. It covers the whole subject from abrasive grain selection and glue preparation to efficient use of the finished wheel. It also gives graphic proof that Norton ALUNDUM Abrasive lasts longer and polishes better . . . thanks to a uniformity that makes every grain work. Send for your free copy of Booklet No. 1340 today. NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities.

NORTON ABRASIVES

Making better products to make other products better

BREVITY—Identify by IEN - 8072 if you write the maker

YOUR "SPECIAL BUSHINGS" MAY BE OUR REGULAR STOCK ITEMS!

Ready for Immediate Delivery

TWO complete bushing standards, the A.S.A. Standard plus our own Acme Standard, provides a much wider selection, enabling you to obtain bushings from stock that often would require special manufacture. Results in faster delivery, lower cost. Write for catalog.

Accurate Interchangeable Concentric

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. Laflin St., Chicago 7, Illinois

THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 8073 if you write the maker

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 8074 if you write the maker

SAVE on ring-shaped metal parts

Cut material and machining costs on ring-shaped parts up to 72" diameter, up to 16 square-inch cross section by letting Dresser form and flash-weld them from bar or plate. Specialized equipment permits very close tolerances.

GET THE DETAILS: Send today for our "RINGS FOLDER" . . . shows method and results.

DRESSER RINGS

Dresser Manufacturing Division, 109 Fisher Ave., Bradford, Pa.
(One of the Dresser Industries)

BREVITY—Identify by IEN - 8075 if you write the maker

FOR PRESSES, DATERS, AND MARKING MACHINES

FORCE BASE-LOCK TYPE

SET YOUR OWN TYPE ... IT LOCKS TIGHT!

Simply press type in base with finger tips. Special cast rubber prints on any surface.

Write for catalog D

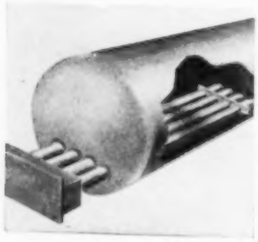
WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK CITY 13, N. Y.

THREE QUARTERS OF A CENTURY'S SERVICE

BREVITY—Identify by IEN - 8076 if you write the maker

HEATING . . Electric tube unit for immersion in oil, tar, resin

Source: MARTIN-QUAID CO.
1847 W. Sedgley Ave., Philadelphia 32, Pa.



Low heat density to prevent burning or charring characterizes the operation of this new electric tube heater in which nickel-chrome elements are assembled on a refractory base and inserted into a heater tube made of seamless steel or other metal to specification. The tube measures 3 in. in diameter and can be specified in lengths to 150 feet.

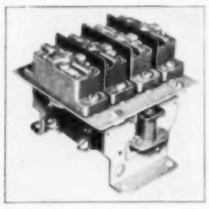
Operation can be specified for 110 to 550-volt ac. or dc. The electric elements can be removed from the tubes from the outside of an open tank or pressure vessel in which the heater installation is made.

Bulletin 201, 8 pages, presents illustrated data on construction, capacities and information required for ordering.

BREVITY—Identify by IEN - 8077 if you write the maker

RELAY . . Four pole assembly particularly for control circuits

Source: SQUARE D CO.
4039-33 N. Richards St., Milwaukee 12, Wis.



Class 8501, Type P04 is a new four-pole relay that actually assembles four normally-open and four normally-closed contacts. This permits a circuit arrangement to be changed from normally open to normally closed by changing the incoming wires to different terminals. It provides four normally-open plus four normally-closed contacts when used in circuits of the same polarity. Rating is 10 amp. non-inductive, 5 amp. inductive on ac. circuits from 220 to 600 volts. Rating is 15 amp. on 110-volt ac. Operating coils are available for 6 to 600 volts and 25 to 60 cycles.

Each relay unit of the four employs a snap-action contact mechanism enclosed in a molded plastic housing. Each housing can be removed for inspection or replacement after loosening two screws. The contacts are made of silver.

BREVITY—Identify by IEN - 8078 if you write the maker

ISOLATING . . Technical reprint on design of mechanisms for shock resistance

Barry Corp.
700-P Pleasant St., Watertown 72, Mass.

Two articles from the technical literature have been reprinted in 16-page booklet form under the title, "Designing for Shock Resistance". Principles involved, how these principles are employed, design suggestions are included.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8079 if you write the maker

VALUABLE GUIDE ON PRACTICAL USE OF UNIT HEATERS for industrial installations

CONTENTS

Principles of Gas-Fired Unit Heater Operation—A Practical Guide to Selection of Equipment—Typical Floor Plan Layouts for Commercial and Industrial Installations—Use of Automatic Controls — Specifications — Combining Heat with Air Conditioning.

WRITE TODAY FOR FREE COPY

SURFACE COMBUSTION CORPORATION, DEPT. D, TOLEDO, OHIO

Janitrol
GAS-FIRED UNIT HEATERS

BREVITY—Identify by IEN - 8080 if you write the maker

on these nationally famous STANDARD GRINDERS

...FULFLO COOLANT PUMPS

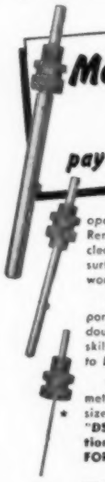
provide a copious coolant supply — constantly, uniformly — with absolutely NO SPRAY OR SPLASH.

Ask us how FULFLO COOLANT PUMPS can increase efficiency on your equipment.

Write on your letterhead for FULFLO MECHANICAL DATA BOOK

THE FULFLO Specialties Co., Inc.
BLANCHESTER, OHIO

BREVITY—Identify by IEN - 8081 if you write the maker



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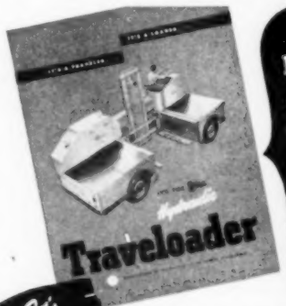
NOBUR Tools *turn a slow bench operation into fast and efficient machine work!* Remove burrs on multi-walled parts with a smooth, clean cutting action that won't mar highly finished surfaces. Eliminate rejects from slow, costly hand work with files, scrapers and abrasives.

Nobur Tools are used on any lathe, drill press, portable drill or flexible shaft. Operation of the double-edge cutting blade is easy and safe . . . no skilled help is required, and the spindle never needs to be stopped for either de-burring or chamfering.

Nobur Tools cut freely on either hard or soft metals, are simple in construction and are made in sizes to cover a full range of hole diameters. ***NEW "DS" SERIES extends range of NOBUR applications to holes as small as 1/8" diameter. WRITE FOR FULL DETAILS TODAY!***

NO/BUR TOOLS
NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

BREVITY—Identify by IEN - 8082 if you write the maker



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It's Free! This New Bulletin gives complete details on the revolutionary Lull Traveloader . . . the amazingly versatile . . . unbelievably flexible machine that makes one-man, one-machine jobs out of your worst materials-handling headaches!

Write for Your Copy, TODAY!

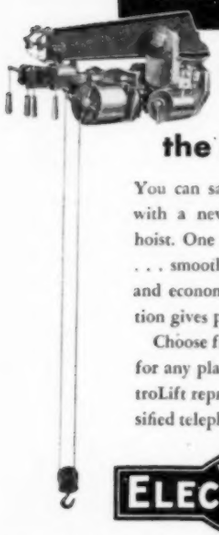
HELP ME streamline my materials-handling by sending me the New Traveloader Bulletin.

Name _____
Firm _____
Address _____
City _____ State _____

LULL MANUFACTURING COMPANY
3612 East 44th St., Minneapolis 6, Minn.

BREVITY—Identify by IEN - 8083 if you write the maker

ELECTROLIFT



the ONE hoist with ALL the advantages

You can save power, labor and time with a new ElectroLift worm drive hoist. One man handles up to 6 tons . . . smoothly, quietly, quickly, safely and economically. Push-button operation gives perfect control.

Choose from a wide range of models for any plant purpose. Call your ElectroLift representative listed in the classified telephone directory. Or write to:

WORM-DRIVE ELECTROLIFT HOISTS

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.

BREVITY—Identify by IEN - 8084 if you write the maker

Are you producing items for defense?

You reduce costs and speed delivery of military items by calling upon Townsend's past experience in producing special fasteners and parts for all types of Army and Navy material.

Townsend has made parts for a multitude of items from rivets for cots and beds to balls for artillery canisters—from hob nails for field boots to rivets for half track treads.

As specialists in cold heading, Townsend produces small parts and fasteners at costs far below screw machine prices—and makes them faster. This saving in time and money may give you an advantage in bidding contracts. Write or phone today.

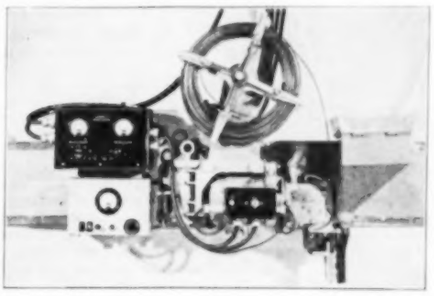
Townsend
COMPANY • ESTABLISHED 1816

Plants—New Brighton, Pa. Chicago 38, Ill.
Cherry Rivet Company Division, Los Angeles, California
Sales Offices in Principal Cities

BREVITY—Identify by IEN - 8086 if you write the maker

WELDING . . Submerged arc machine for automatic straight line operation

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



Type UE-48 is a new assembly of the company's welding head, a small rod reel, a Unionmelt feed hopper and the required controls for automatic operation. All are on a side-beam carriage to ride a structural track above a work area. The track can be secured to a wall, a beam or to floor posts. The welding head can be positioned at right angles to the track or parallel with it. Set up can be made from any type of butt or fillet weld with metal thickness ranging from 16 gage to 1½ in. for a single pass. A large reel holding 150-lb. welding-rod coils can be specified in place of the small reel shown in the illustration.

Welding current, carriage speed between 3 and 200 ipm., weld voltage and rate of flow of the Unionmelt arc-submerging material are all adjusted before the machine is put into operation. An electronic governor controls the travel speed. An adjustment in connection with this governor permits changing the speed while the carriage is in motion. Operation is started at a control switch. Then the machine proceeds without further attention. In addition to the Type-UE welding head, illustrated, a Type-DS head can be used on the same carriage. Then the machine is known as Type DS-48.

BREVITY—Identify by IEN - 8087 if you write the maker

DRIVE . . Miniature speed reducer, to 0.375 in. lb., 25 to 7,200 to 1

Source: TELECHRON INC.
73-77 Homer Ave., Ashland, Mass.

The illustration shows a cut-away view of a typical assembly of sealed self-oiling speed-reducing gear train which the company is prepared to supply to specification in quantity production. Typical applications are in clock movements, timer drives, instruments. Standard ratios are between 25 and 7,200 to 1 with others as high as 216,000 to 1. Output load torque is to 0.375 inch pounds. All gears hobbed for accurate operation.

Booklet, "Precision on the Production Line," 20 pages, illustrates and describes the company's research, engineering, design and production facilities and shows typical products.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8088 if you write the maker

TORIT DUST COLLECTORS

are the traps that will make sport of the dust problem in your plant

Your employees will be shooting par when dust-creating machines are equipped with Torit Dust Collectors. There'll be no abrasive dusts to make them hook or slice . . . no extra hazards to finished parts or costly equipment.

Fixing up your plant is as easy as dropping a six inch putt, for Torit Dust Collectors are economical . . . in cost, in operation and to maintain. They also fit into present or future production layouts.

Ask one of the pros . . . the 20,000 users of Torit Dust Collectors . . . how you can cut strokes off your game, or write for details and latest Torit catalog.

TORIT
Manufacturing Co.
286 Walnut Street St. Paul 2, Minn.

BREVITY—Identify by IEN - 8089 if you write the maker

Lighter...faster Rotor grinders "PAID OFF" in 48 days

JOB: Grinding welds on truck cabs. Using slow, 20-pound electric grinders. Only 2800 r.p.m. under load.

SOLUTION: Rotor Application Engineer suggested changing to Rotor 6" Air Grinders that weigh only 9¼ pounds. Speed 5500 r.p.m. under load.

RESULTS: Stepped up metal removal and increased wheel life. Lower maintenance. Cut man-hours per cab. Savings paid off cost of Rotor Grinders in 48 days on basis of 50% use factor. Write for Catalog No. 58.

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 8090 if you write the maker

FOUR WAY ENTRY STEEL BOUND SKID BOXES

STORE LOOSE ITEMS EFFICIENTLY SAVING FLOOR SPACE BY UTILIZING AIR SPACE

Available plain or with corner tiering pockets for stacking three or four units high. Rugged arc-welded under-frames. Corner angle rounded for safety.

THE LANHAM COMPANY, 1405 S. 12TH STREET, LOUISVILLE, KY.

LANHAM
FOR LIFETIME

BREVITY—Identify by IEN - 8091 if you write the maker

Mathews Portable Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

ROLLER CONVEYERS • CHAIN CONVEYERS • LIVE ROLLER CONVEYERS
WHEEL CONVEYERS • ELEVATING CONVEYERS • BELT CONVEYERS
ROLLER SPIRAL CONVEYERS • TROLLEY CONVEYERS
SPECIAL CONVEYING MACHINERY

MC C

MATHEWS CONVEYERS

GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities

BREVITY—Identify by IEN - 8092 if you write the maker

PORTELVATOR® "S"

for extra low pick-ups and extra high lifts...

Safety of Operation

is inherent in the mechanical lift principle of this brawny tool, which transmits power through worm, worm gear, and screw.

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Saves valuable production time.

Get complete information now and be ready for the challenge ahead. Write for Bulletin P-506-S.

CAPACITY	1000 POUNDS
MAXIMUM PLATFORM HEIGHT	58"
MINIMUM PLATFORM HEIGHT	6"

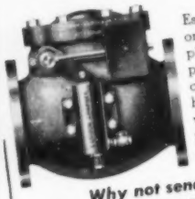
THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 8093 if you write the maker

- Longer Service
- Less Maintenance
- Greater Dependability

GOLDEN-ANDERSON

Cushioned Swing Check Valves



Especially designed for use on water lines, to allow full pipe line flow with minimum pressure drop. The adjustable cushion chamber on side of body permits rapid closure of valve, and prevents any slapping or banging of disc against seat on reverse flow.

Why not send for new technical Bulletin W-1?

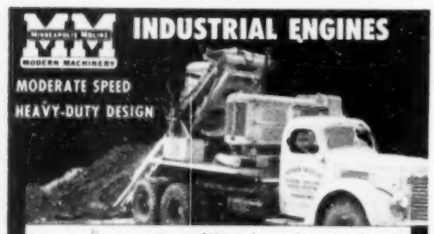
GOLDEN ANDERSON Valve Specialty Company
2079 KEENAN BUILDING · PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 8094 if you write the maker

INDUSTRIAL ENGINES

MINNEAPOLIS-MOLINE MODERN MACHINERY

MODERATE SPEED
HEAVY-DUTY DESIGN



MM engines and power units are used in several sizes as original power installations for heavy and continuous service equipment. Standardization of many parts results in high production for finest quality, low cost per hp, and superior repair parts service. Design flexibility and standard SAE housings provide low-cost installations for any type of drive required.

Have your shovels, trenchers, graders, hoists, crushers, pumps, generators, and drill rigs equipped with MM POWER.

25-230 hp

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 8095 if you write the maker

GAGE . . Electronic equipment reads thickness in a moving strip

Source: INDUSTRIAL NUCLEONICS CORP.
1203-7 Chesapeake Ave., Columbus 12, Ohio

Radio active material enclosed in a capsule is mounted in one of two heads that apply above and below a moving strip of material in this new electronic thickness gage. Beta rays from the material are directed at the strip. Those that are not absorbed by it pass to the head on the opposite side. Here they are gathered in a radiation detector and are used to operate a Bristol Dynamaster electronic strip chart recorder.

Thickness of the strip material is in close reverse proportion to passage of the rays through it. Readings are not affected by variation in chemical or physical characteristics of the material being measured. They can be made directly in terms of thickness of materials of constant density. The gage is designed to be stable under severe plant conditions.

Application can be made on strip aluminum, brass, coated textiles, plastics, rubber, steel. Readings are provided continuously within a few millionths of an inch without actually contacting the material itself. Dials are provided for setting to a calibration chart. A scanning mechanism can be employed to read across the width of a sheet. Scanning can be carried out continuously or intermittently or the detector unit can be set to remain in a stationary position at any point along the scanning width.

BREVITY—Identify by IEN - 8096 if you write the maker

VALVE . . Globe and angle units, forged steel, particularly for gages

Source: EDWARD VALVES INC.
1235 W. 145th St., East Chicago, Ind.

Male inlet integral with the forged-steel body and female outlet constitute new design in the company's Figure-152J globe valve and 153J angle valve to assemble gages on a pipe line. Rating is 4,000 lb. at 150 deg. F., 600 lb. at 750 degrees F.

Construction includes a taper threaded connection between the body and bonnet to prevent the bonnet from backing out of the valve due to vibration, a long taper semi-needle stainless steel stem-disk with fine-pitch thread, a backseating shoulder to pack under pressure, plated bonnet and packing nut to minimize possible galling and corrosion. Valve size is ½ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All Products In This Issue Are Indexed on Page 102

BREVITY—Identify by IEN - 8097 if you write the maker

We have the **"KNOW-HOW"**

and the **"KNOW-WHY"**

when it comes to **WELDING**

33 years of welding and fabricating experience, plus a complete designing, engineering and metallurgical service, put us in a position to help *you* with *your* problems where fusion or resistance welding applies to either ferrous or non-ferrous metals.

We'll be glad to send our illustrated catalog. Just drop a line to our Product Development Division.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

BREVITY—Identify by IEN - 8098 if you write the maker

WATSON-STILLMAN HYDRAULIC POWER TOOLS

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

PORTABLE PIPE BENDERS

Bends all standard, extra heavy and double extra heavy steel pipe from ⅜ in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

WIRE ROPE SHEARS

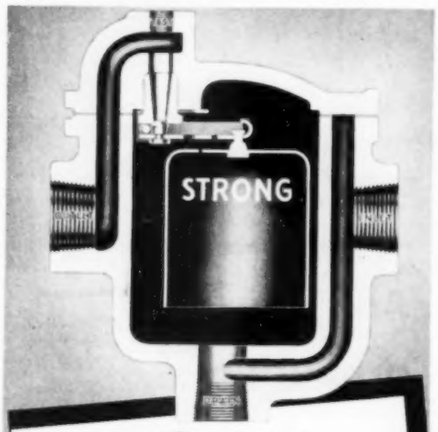
W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Write for Bulletin A-5

9-1-24

Distributor Products Division
WATSON-STILLMAN
ROSELLE, NEW JERSEY

BREVITY—Identify by IEN - 8099 if you write the maker



5 Reasons

STRONG* 70 Series Traps give better service!

Look to these five reasons for long, trouble-free service in STRONG 70 Series Traps:

1. *Valve and seat guaranteed leakproof for one year—made of STRONG's patented, wear-resistant Anum-Metl;*
2. *Easy servicing—permitted by the renewable seat design, cover with all working parts easily removed without breaking pipe connections;*
3. *One piece bucket—stainless steel, no welds;*
4. *Turbulence avoided, choking minimized, 25% greater capacity—with STRONG's exclusive Hi-Cap orifice;*
5. *No dribbling, quick, full opening—high ratio leverage.*

STRONG *in-line* 70 Series Traps are available in sizes from ½" to 1", semi-steel construction. STRONG's "two-in-one" blast trap with integral thermal air vent is also available in the 70 Series (see cut below).

Catalog No. 68-I describes these traps in detail along with other STRONG traps. Write today.

*Trademark Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY
1392 WEST 3rd Street
Cleveland 13, Ohio
†ANUM-METL Reg. Trade Mark

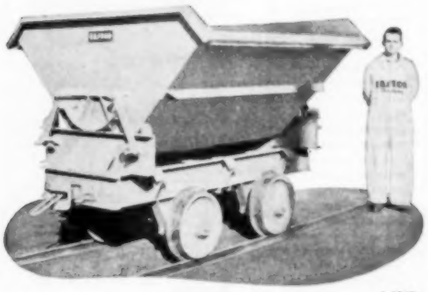
Reducing Valve · Blast Trap · "SY" Strainer

STRONG

BREVITY—Identify by IEN - 8101 if you write the maker

EASTON

a dependable design and construction service in industrial cars



A-1215

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 8102 if you write the maker

BUILD WITH

GIANT G-P PANELS

Standard 12', 14' and 16' lengths or "Scarfed" to suit your needs

Georgia-Pacific giant Fir Plywood panels are helping to solve production problems and are saving installation time and money in countless industrial, construction and marine uses.

Quality-produced by modern hot plate presses, these extra-length panels are available in natural 12 ft. or scarfed 14 ft. and 16 ft. lengths. Special sizes to meet your specific application can also be produced.

Write, wire or phone your nearest G-P office for prices and size recommendations to fit your particular application.

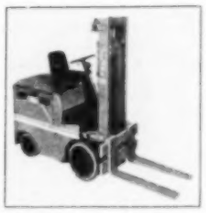
GEORGIA—PACIFIC
PLYWOOD & LUMBER CO.
612 North Capitol Way, Olympia, Washington

Offices or Warehouses in: Augusta • Birmingham • Boston Chicago • Columbia • Louisville • Memphis • Nashville • Newark Philadelphia • Portland • Olympia • Raleigh • Richmond • Savannah

BREVITY—Identify by IEN - 8104 if you write the maker

TRUCK . . Motor driven fork lift in load ratings of 2 and 2½ ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



New design in the company's Carloader line of motor-driven fork-lift trucks includes a redesigned battery compartment with a center-hinged top cover to permit charging and servicing without removing the battery from the truck. The cover also is removable so the battery can be lifted out. Either or both of the side louvers can be removed so the battery can be slid out to one side or the other.

The travel control lever is mounted on the steering column so the operator can select direction of travel and engage the first point of power in one movement. Automatic acceleration provides for shift from one point of power to the next in timed sequence in accordance with torque requirements.

The steering axle is mounted on rubber torsional bearings. A "deadman" brake is linked to the driver's seat and sets to hold the truck against any movement when the seat is not occupied. Standard equipment includes cushioned tires and a cushioned seat with a back rest.

Model 4024 with 2-ton capacity measures about 77 in. in overall length without the forks and 44 in. in overall width. Wheel base measures 44 inches. Outside turning radius is 74 inches. The truck will operate in minimum 66½ in. intersecting aisles. Service weight without the battery is about 6,000 pounds.

Model 5024, rating 2½ ton, measures 78 in. in length, 41 in. in width, 48 in. in wheel base, has an outside turning radius of 78 in. and will operate in 68½-in. intersecting aisles. It weighs about 6,400 lb. without the battery.

BREVITY—Identify by IEN - 8105 if you write the maker

NAILING . . Pneumatic tool and equipment available for lease

Source: NU-MATIC NAILER INC.
2902 Rowena St., Dept. 10, Los Angeles 39, Calif.

The company announces extension of the territory it has been covering for several years in California to make its pneumatic nailing equipment available for lease on a national basis. The tool is designed for use on essentially horizontal surfaces. It will drive the nails required in 5,000 sq. ft. of floor or roof, with beams or rafters on 6-in. centers, in an 8-hr. day. Weight is about 30 pounds.

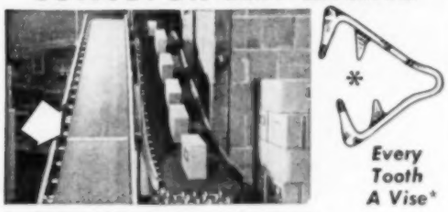
Equipment includes the tool itself, an air compressor and the required hose. Lease arrangement is made to include maintenance and repairs on a flat hourly rate based on an 8-hr. working day. The tool uses 12 cu. ft. of air at 90 pounds. Control centers at a trigger on the handle which is pressed to drive the nail. A hopper holds 400 to 600 nails which feed to the point of driving one at a time.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8106 if you write the maker

ALLIGATOR

CONVEYOR BELT LACING



Every Tooth A Vise*

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width*.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

BREVITY—Identify by IEN - 8107 if you write the maker

ONE-HAND DRILL

ideal

for overhead work

40% to 50% lighter than non-rotating hammer drills of equal capacity, the CP-9 HANDRIL—a 7½ pound, self-rotating air hammer—is especially useful for overhead drilling. It will drill 1¼" diameter holes in concrete to a depth of two inches in 40 to 45 seconds a hole. An all-around tool for installing machinery, hanger fittings, anchor bolts, it also is excellent for light demolition work, chipping and scaling. Write for copy of SP-3016.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 8108 if you write the maker

FABRICATED WIRE CLOTH AND PERFORATED METAL

Screens -- Strainers -- Filters

Buy from a plant that's equipped to do your fabricating job—quickly, easily—all under one roof. Highly trained personnel, modern equipment, large material stocks, enable Pittsfield to speedily fill your needs economically and to high standards of performance.

FABRICATION SERVICES
- Shearing
- Soldering
- Brazing
- Welding
- Crimping
- Plating
- Stamping

SPEEDY QUOTES AT NO OBLIGATION

PITTSFIELD PRODUCTS, Inc.
ANN ARBOR, MICHIGAN

BREVITY—Identify by IEN - 8109 if you write the maker

Stop Stray Metal

...before it reaches your Customers

THE SUREST WAY to find stray metal hidden away in a package is with Allis-Chalmers electronic Metal Detectors. It detects both magnetic and non-magnetic metals.

The Metal Detector fits production set-ups. For example, conveyor belts from packaging machines can pass through the aperture of the unit 15 to 600 fpm. It can also be used on food processing lines to protect expensive machines from damage by stray metal. Compares in upkeep and operating cost with a radio.

Call your nearby Allis-Chalmers Office for 20 page bulletin 15B7217A which shows many ways to apply A-C Metal Detectors, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-2322

ALLIS-CHALMERS

BREVITY—Identify by IEN - 8110 if you write the maker

SAFE HANDS LOSE NO TIME

Natural-rubber* treaded

Grab-it

Non-slip grip, wet or dry; extra protection against cuts; and 5 to 10 times longer wear

Rubber-Treaded wearing surface wears like a tire. Far outlasts higher priced leather.

Non-Skid: Rough surfaced, waterproof rubber grips firmly, safely, easily—wet or dry.

Strong, Comfortable Fabric lining and back. Feels like any canvas glove. Flexible.

Big, Full Hand Size with elastic on back to fit snug on any hand.

For oily work we recommend NEOX coated gloves

* Also NEOX (reinforced neoprene) and plastic coatings, over-all or palm-and-thumb only. Gauntlet, safety cuff and knitwrist styles.

Smart management supplies good work gloves
Safer, more comfortable coated-fabric gloves speed work handling, reduce lost-time accidents, improve comfort and job attitude. *And cost less because they wear far longer.*

Edmont Mfg. Co., 1226 Walnut St., Coshocton, O.
World's largest maker of coated industrial gloves

BREVITY—Identify by IEN - 8111 if you write the maker

Economy ELEVATING Table

For feeding sheet stock, supporting fabricated frames, handling heavy dies, or as a portable work bench. All four sides are accessible to the user.

Lifting and lowering load is hand operated. Crank handle can be attached and operated from either end, with two speed lifting. Self locking worm and screw elevating mechanism holds work at any height without danger of falling. A foot operated floor lock holds table stationery when in use.

This standard designed table has a capacity of 2,000 lbs. Special designs can be built to suit your requirements.

ELEVATING TABLE EXTENDED

PRICE F.O.B. CHICAGO $310.00
Subject to current discount

ECONOMY ENGINEERING CO.
4502 W. Lake St., Chicago 24, Ill.

BREVITY—Identify by IEN - 8112 if you write the maker

THE NEW

SEMCO NIBBLER PRESS

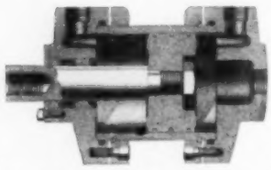
PUNCHES HOLES ANY SHAPE — ANY SIZE UP TO 12" X 4¼" AT ONE SETTING.
NO SPECIAL DIES ARE NEEDED
Write for latest literature, prices and information to—

SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET, ELIZABETH, N. J.

BREVITY—Identify by IEN - 8113 if you write the maker

CYLINDER . . Double acting hydraulic 2 to 10 in. bore, pressure to 3000 lb.

Source: RIVETT LATHE & GRINDER INC.
20-24 Riverview Road, Brighton 35, Mass.



Keeper rings fitted into grooves, near the ends of the seamless-steel tube that forms the body of this new cylinder, act as anchors for flanges to which the cylinder heads are secured. The heads are machined to fit over the machined ends of the tube and are sealed by O-rings. The arrangement permits turning the pipe connections as required for a given installation.

The piston is fitted with metal rings or can be specified in packed assembly. It rides against a shoulder on the piston rod which is supported in a bronze throat ring. The ring also acts as a seat for composition rod-packing rings.

Ten bore diameters are 2 to 10 inches. Three pressure ranges are 300, 1,500 and 3,000 pounds. There are seven standard mounting designs. A piston rod in correct diameter to provide one-half the pressure rating of the opposite side of the piston is available to specification.

BREVITY—Identify by IEN - 8114 if you write the maker

TRUCK . . Four-wheel dump unit holds 1 cu. yd., roll dumps to front

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.

Model SRF-1 is a new dump truck in the company's Phil-Dump line for movement by hand or to ride on the forks of a power-lift truck. The dump body measures 48 in. in width by 44 in. in length. It rides on the base in a self-dumping roll action when a latch is released at the rear. Upon emptying it returns to upright position and latches there.

Casters at the rear and axle-mounted wheels at the front are assembled on roller bearings and equipped with solid rubber tires. The body and base are made of formed steel. The truck is intended to handle materials such as stampings, castings, scrap, sand, fertilizer and general bulk materials to 1 ton. Overall width is a little more than 52 inches.

BREVITY—Identify by IEN - 8115 if you write the maker

HEATING . . How to recover waste heat from engines and compressors for plant heating

Modine Mfg. Co.
1724 Racine St., Racine, Wis.

Diagrams in new 4-page Bulletin 00531-A show schematic arrangement of equipment to recover heat from engine-driven compressors and from diesel-electric generator sets. Text describes how this heat was employed to heat plant buildings. Sample calculation and capacity tables are given for selection of the correct model of the company's unit heater.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8116 if you write the maker

Put all your new machinery on ISOMODE* PADS

1. For faster installation
2. For quieter plant
3. For less maintenance

That's right — vibration absorbing Isomode* Pads are the easy way to save time, labor and operating costs with new equipment and in new plants.

Engineered by vibration specialists, these 5/16" pads have proved their ability to absorb disturbance normally transmitted to floor — even shocks from large punch presses! Locate machines *anywhere*. Usually no need for bolting. Simply cut to size and install under legs or base.

And the results are plain to see: Less machine maintenance, less noise, reduced building damage. Write for full facts. *Reg. U. S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

BREVITY—Identify by IEN - 8117 if you write the maker

250-watt WELLER Gun

Does All Types of Soldering! Heavy jobs—light jobs. The Weller Soldering Gun WD-250 does *both* with the same ease and efficiency. Saves time on every job. Cuts current costs. Your Weller Gun pays for itself in a few months.

5-SECOND HEATING. Pull trigger and you solder. No waiting. No wasted current.

RIGID-TIP. Chisel shaped and braced for heavy duty. Larger soldering area and faster heat-transfer speed work.

LONGER REACH. Gets between wiring and into the tightest spots easily.

SOLDERLITE. Prefocused spot-light lets you see what you're doing all the time.

TRIGGER-SWITCH CONTROL. No need to unplug gun between jobs. Heat goes off when you release trigger.

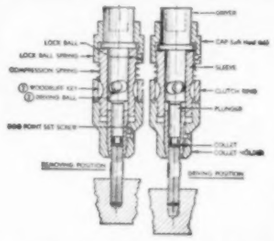
DUAL HEAT. Single heat 200 watts; dual heat 200/250 watts; 120 volts, 60 cycles.

SOLDERING GUIDE
Get your pocket-copy of "Soldering Tips"—revised, up-to-date and fully illustrated, 20-page booklet of practical soldering suggestions. Price 10c at your distributor or order direct.

WELLER ELECTRIC CORP.
823 Packer Street • Easton, Pa.

BREVITY—Identify by IEN - 8118 if you write the maker

TITAN AR SERIES
Stud Driver and Remover



Engineered for the Aircraft Industry

Mutilation, scraping of stud threads — and distortion of cotter key holes — are eliminated by the new TITAN high speed, collet type, stud driver!

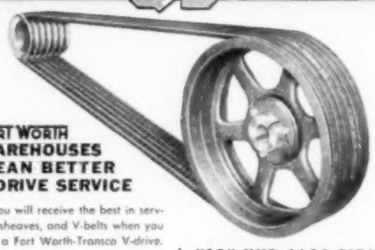
Unique in design, practical in use, the stud is driven by PITCH DIAMETER PRESSURE instead of pressure on top of the stud. Saves studs, saves time, speeds your work!

Write for Literature and Prices, TODAY!

TITAN TOOL CO.
Production Tools
46 MAIN ST., FAIRVIEW, PA.

BREVITY—Identify by IEN - 8119 if you write the maker

SEE FOR YOURSELF—Next time try a FORT WORTH TRANSCO QD SHEAVE



FORT WORTH WAREHOUSES MEAN BETTER V-DRIVE SERVICE

You will receive the best in service, sheaves, and V-belts when you buy a Fort Worth-Transco V-drive.

Two manufacturing plants and a large foundry, designed to make sheaves, assure volume production even in periods of short supply. Factory warehouses in most large industrial centers supplemented by numerous stocking distributors provide quick delivery of stock sizes.

We will be pleased to advise you the name of your nearest stocking distributor.

"QD" HUB ALSO FITS NEW FORT WORTH "QD" Roller Chain Sprocket

Speed changes are simplified and "same" sheaves and sprockets can be carried more easily.

If your favorite distributor doesn't stock the Fort Worth QD line — both sheaves and sprockets, tell him about them. He'll reward you with better service.

Write for descriptive catalogs on "QD" Sprockets and Sheaves. Address Dept. 26, and they will be sent to you immediately.

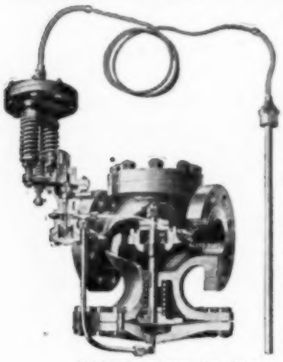
FORT WORTH STEEL AND MACHINERY CO.
Dept. 28, 3600 McCart St., FOR WORTH, TEXAS

FORT WORTH PRODUCTS
ROLLER CHAIN SPROCKETS
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

BREVITY—Identify by IEN - 8120 if you write the maker

LOW COST

Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 8121 if you write the maker

The Raybestos-Manhattan packings in the stuffing box of this hydraulic accumulator ram play an important part in the machine's successful operation. The complete line of R/M packings and gaskets plays an important part in the successful operation of valves, compressors, pumps, hydraulic and other equipment of all types. The R/M distributor near you will gladly help select the right R/M packing or gasket to meet your needs. Or write for the new R/M Packing Catalog.

RM PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.
FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles Mechanical Rubber Products • Abrasive and Diamond Wheels • Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts Radiator Hose • Powdered Metal Products • Bowling Balls

BREVITY—Identify by IEN - 8123 if you write the maker

TESTING . . Oscilloscope for use in microwave installations

Source: GENERAL ELECTRIC CO.
1949 Electronics Park, Syracuse 1, N. Y.

Type ST-2C is a new laboratory-type oscilloscope. It employs a 5-in. cathode-ray tube cradled in rubber and protected by a ¼-in. green-colored safety window. Frequently used controls are located on the front panel and grouped according to function. They include concentric controls in the sweep oscillator. Weight is 43 pounds.

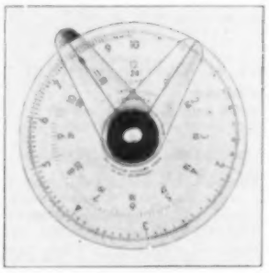
The vertical input attenuator permits selection of three levels from the input binding post or three levels from the RC probe. Ratios as high as 1,000 to 1 can be attenuated without frequency discrimination. The probe provides a high impedance input to prevent loading of the circuit under test. A trace can be expanded to several times the diameter of the tube by means of a drive provided from the horizontal amplifier. This permits good display of short-duration pulses and permits close observation of portions of a wave pattern.

Positioning controls are positive in action so a trace responds immediately to any change in a setting. Straight resistance coupling is employed and there is no positive slope to the frequency-response curve. The response falls off gradually and the slope can be used to view signals containing frequency components to 7 megacycles. A voltage calibrator is included with provision for adjustment in 7 steps between 0.3 and 300 peak-to-peak volts.

BREVITY—Identify by IEN - 8124 if you write the maker

CALCULATING . . Circular slide rule and time scale for job figuring

Source: WILLER SALES CO.
P. O. Box 10008-A, Los Angeles 45, Calif.

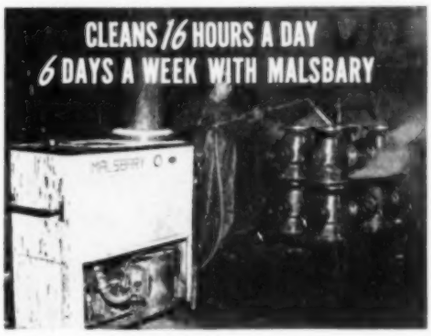


Plastic disc forming the body of this new calculator measures 4 in. in diameter. It carries an outer circular logarithm scale and an inner time scale, the latter graduated to read to 24 hours in hours and tenths. Mounted on the disc center for angular adjustment and also for rotation over the disc are two transparent fingers carrying radial lines leading from the center fastening point.

The fingers act as a combination of slide and cursor in connection with the stationary logarithm scale for slide-rule computations. The calculator assists in computations involving elapsed and accumulated time, in costs and time and per unit of production, in per cent efficiency. List price is $3. Designation is Loyd Computer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8125 if you write the maker



Nordstrom Valve Div., Rockwell Mfg. Co., uses 2 Malsbary Cleaners—a Model 220 for production cleaning before assembly, a 110 (pictured) on machinery, lift trucks, walls and floors. These cleaners blast away all excess lubricant and dirt-filled grease—reduce fire hazards, speed production.

Malsbary Cleaners are gadget-free, rugged and dependable. No trained "technicians" required. And Malsbary offers the only complete line—2 steam vapor models, pressures 120-150 lbs.; 3 heavy-duty models with 5 cleaning actions and pressures 250-400 lbs. Stationary, portable and trailer mount.

Write today for free folders and actual job data.

MALSBARY MANUFACTURING CO.

Room 708
845 92nd Ave.
Oakland 3, Calif.

BREVITY—Identify by IEN - 8126 if you write the maker

UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL EXPORT COMPANY, NEW YORK
UNITED STATES STEEL SUPPLY COMPANY,
WAREHOUSE DISTRIBUTORS, COAST-TO-COAST

U·S·S MULTIGRIP FLOOR PLATE

UNITED STATES STEEL

BREVITY—Identify by IEN - 8127 if you write the maker

Eureka Williams Corporation engineers had a tough design problem: the elimination of excessive wear on a vacuum cleaner drive belt turning a brush roll at 3500 rpm.

Instead of costly and time-consuming "cut-and-try" experimentation, they slowed the motion over 200 times with the Kodak High Speed Camera. When the 16mm film was projected at normal speed, the answer was readily apparent—a belt material of different characteristics. In addition, the pictures showed how a change in brush design would greatly increase sweeping efficiency.

Here is but one example of how the Kodak High Speed Camera, taking up to 3200 pictures a second, solved a difficult design problem. The booklet, "Magnifying Time," will show how high speed photography can help solve your problems of design, production, and product performance. For your copy, write to Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

Kodak

BREVITY—Identify by IEN - 8129 if you write the maker

JOMAC GLOVES

are first choice of workmen who buy in this company's toolroom

A manufacturer* sells Jomac Gloves as well as leather palm, "monkey face," and various weights of canvas gloves to his workmen for handling sheet steel. Although Jomacs cost more, experience has shown they give longer wear, and they are now the first choice of workmen in this plant. *Name on request.

Jomacs are

Washable • Reversible • Flexible • Heat-resistant

Protect against heat, cold, rough and sharp edges

C. WALKER JONES CO.

6135 N. Lambert Street, Philadelphia 38, Pa.

BREVITY—Identify by IEN - 8130 if you write the maker

For processing
For heating
For power

IRON FIREMAN STOKERS will cut firing costs

COAL-FLOW MODEL

No coal handling—coal flows directly from bunker to fire

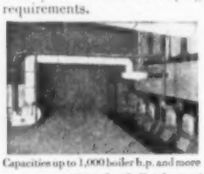
Automatically fires economical stoker coal with complete reliability. Modulated fuel and air supply follows load automatically. No wasteful lag or runover. Feeds coal directly from bunker or bin—eliminates costly manual coal handling. Outstanding fuel economy. Unusually flexible to meet varying requirements.

Capacities up to 400 boiler horsepower

PNEUMATIC SPREADER MODEL

Pipes coal direct to fire

Completely eliminates manual coal handling. Efficiently burns all grades of bituminous economy coals, including low ash fusion, sub-bituminous and lignite—ranging from ¼" to 2" top size. Thoroughly dries and preheats coal. This complete combustion system is readily adapted to any boiler room layout (even with bunkers on other floor levels).



Capacities up to 1,000 boiler h.p. and more

Write for full information and specification charts

IRON FIREMAN

3172 WEST 106th STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 8131 if you write the maker

FREE! FLOOR-CARE BOOKLET

● Send today for this 8-page booklet packed with valuable information on all types of floors. Tells you how they're made — how to clean them — protect them — make them wear longer. Answers 101 questions. Saves you time and money! Every plant and office should have one.

MAIL THIS COUPON NOW FOR YOUR COPY!

MASURY-YOUNG COMPANY
76 ROLAND STREET, Dept. C
BOSTON 29, MASSACHUSETTS

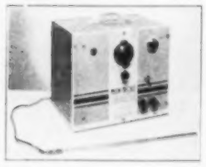
Please send me your FREE FLOOR-CARE BOOKLET

NAME .....
(Please print clearly)
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

BREVITY—Identify by IEN - 8132 if you write the maker

CONTROL . . Electronic regulator governs input to furnace, oven, pot

Source: PHEN-TROLS INC.
13-17 Franklin Place, Rutherford, N. J.



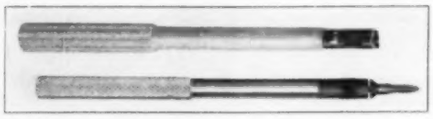
New Model 100 temperature regulator plugs into a 110-volt 60-cycle ac. power source and provides twin outlet connections, each rated at 15 amp., to supply electric current to heating elements or to operate solenoid valves in lines to gas-heated equipment. Control centers at a thermocouple which is positioned in the heated equipment. This thermocouple actuates a sealed mercury-type relay with capacity for a 3,000-watt heater load. The relay opens and closes on a ½-deg. C. temperature rise and fall. The control point can be set at any temperature to a maximum of 500 deg. C.

Fail-safe operation is assured by the fact that failure of any components within the regulator will result in open circuit to the equipment served. Two fuses are mounted in the face of the housing to protect the control and power circuits. A signal lamp indicates active operation.

BREVITY—Identify by IEN - 8133 if you write the maker

SCREW DRIVING . . Starting tool places a screw in a difficult location

Source: BONNEY FORGE & TOOL WORKS
51 Tilghman St., Allentown, Pa.



Gripping finger forming part of the tongue that rides in a screw head slot holds a screw in position at the end of this tool so it can be reached into and started in a location ordinarily difficult of access. The screw is released by turning the handle. Four lengths range from 2½ to 15 inches. Nylon-handle units also are available 6 and 9 in. overall.

BREVITY—Identify by IEN - 8134 if you write the maker

SAFETY . . Four employee booklets deal with aspects of safety both on the job and off

National Safety Council
423-27 N. Michigan Ave., Chicago 11, Ill.

Four new booklets for distribution to employees all employ cartoon illustrations and easily-read text to convey their safety messages. "Aren't People Funny" illustrates twelve unsafe attitudes, "K. O. Dirt and Disorder" points out reasons for keeping a place clean and orderly, "Cry Whoa" uses Shakespeare to comment on motor vehicle accidents. These first three are 16-page, 3 by 5½-in. booklets that list at 12 cents individually to members, 6 cents each in quantities of 100 to 999, 3 cents each for 20,000 or more.

The fourth booklet, "Safety 'Round the Clock," deals with home safety 24 hours a day. It has 8 pages, measures 3½ by 8 in., lists at 10 cents individually to members, 4.5 and 2.6 cents in quantity similar to the others.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8135 if you write the maker

Here's Efficient, Dependable Air Supply

JOY WL-80 "UNITAIR" COMPRESSOR

★ 81 to 640 CFM
★ Two Stage . . . Air cooled
★ A size for *every* standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

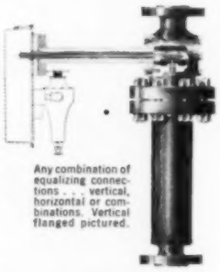
W & D 13096

JOY MANUFACTURING CO.

General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

BREVITY—Identify by IEN - 8136 if you write the maker

NEW! . . . all these features in one liquid level control



Any combination of equalizing connections . . . vertical, horizontal or combinations. Vertical flanged pictured.

● BS&B "Climax" presents the new Type 888 featuring ● New *cone point pivot* . . . rugged, friction-free, easily replaceable in the field ● Torque tube housing is removable and reversible without dismantling controller housing ● You can install two torque tube housings and two pilots and/or pilot and switches for simultaneous level control and alarm operation ● Heavier walls and flanges for increased safety in smaller cage housing ● Perfect alignment with male or female flange connections throughout ● And many other exclusive features.

Free Catalog . . . Specifications . . . Prices Performance Figures . . . Write Today!

BS&B "Climax"

BLACK, SIVALLS & BRYSON, INC.
CLIMAX CONTROLS DIVISION
7502 East 12th Street, Adv. Dept. Rm. 56L
Kansas City 3, Missouri

BREVITY—Identify by IEN - 8137 if you write the maker

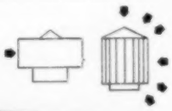
do you know

the TRUTH about ventilators?

Ventilators are usually selected on the basis of their *capacity ratings*. That makes sense, but do you know that:

1. Capacity ratings of most ventilators are *not* certified.

2. Capacity ratings of most ventilators are based on *horizontal* wind tests only.



Breidert Air-X-Hausters

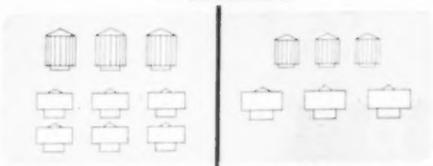
provide safe, sure ventilation no matter which way the wind blows!

Patent No. 3369438

and . . . Breidert Air-X-Hausters are the *only* ventilators with published certified capacity ratings based on tests* made with wind blowing in *all* directions as shown above.

Only such tests can guarantee the capacities a ventilator will deliver under actual operating conditions. No matter which way the wind blows, barring interior negative pressures, the Breidert provides safe, sure ventilation . . . on roofs, vent flues, chimney tops. Stationary, no moving parts, nothing to jam or get out of order.

HOW YOU CAN GET BETTER RESULTS WITH LESS MONEY



It takes fewer Breiderts to do the job as same size conventional ventilators. (or) *You can use the same number of smaller size Breiderts to do the same job as conventional ventilators.*

Get *all* the facts! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dep't C.

*By Pittsburgh Testing Laboratories

THE G. C. BREIDERT CO.

3129 San Fernando Road, Los Angeles 65, Calif.

Representatives in principal cities throughout the U.S.

BREVITY—Identify by IEN - 8139 if you write the maker

EXCLUSIVE

only

UNIVERSAL GREASE FITTINGS

have these patented "easy-on easy-off" features

The Patented Release Shoulder and Release Groove assure an easy one-way angle release and eliminate the necessity of any twisting motion at low or high pressures. Universal Hydraulic Grease Fittings give positive sealing at high or low pressures and resist breaking, distortion and twist outs.

Sample fittings sent on request.

UNIVERSAL Couplers

Will stand 20,000 lbs. working pressures. Strongly and sturdily built . . . easy release action under all pressures. A model is available for every need. We make a complete line of hydraulic grease fittings and couplers for maintenance or original equipment.

WRITE FOR 1951 INDUSTRIAL CATALOG

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

BREVITY—Identify by IEN - 8140 if you write the maker

American Beauty

ELECTRIC SOLDERING IRONS

DEPENDABLE

DURABLE

EFFICIENT

are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP. Dept. SI-2

120-3

Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICHIGAN

BREVITY—Identify by IEN - 8142 if you write the maker

HEATING . . Induction machine rates 5 kw. for brazing, heat treating

Source: WESTINGHOUSE ELECTRIC CORP. 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Stepless control is provided for the electronic power output from this new radio-frequency generator. It applies on relatively small work parts that are to be annealed, brazed, soldered, surface hardened. It is suited for production-line operation with the work fed continuously through the heating coil to which the machine connects. It can be applied also in small-lot operation on a batch basis. Various set ups are made by changing the heating coil and fixture which attach at the front or top of the rectangular housing. This housing is made of aluminum for radio shielding. Electric interlocks protect the operator.

BREVITY—Identify by IEN - 8143 if you write the maker

CLEANING . . Descaling solution for application on hot steel forgings

Source: PENNSYLVANIA SALT MFG. CO. 1002 Widener Bldg., Philadelphia 7, Pa.

New bulletin describes action, presents data

Pennsalt SR-4 dissolved in weak muriatic acid and water forms a new solution to remove furnace scale from steel forgings during the quenching operation. The solution is employed in a rubber-lined tank into which the work is dipped in baskets made of sheet iron. Parts covered with forging scale are immersed 4 or 5 minutes and then are placed directly into the heat treating furnace or are stored for heat treating later. When forgings treated with the solution are water quenched, after heat-treating at temperatures to 1,600 deg. F., the scale "blasts" off the surface leaving them clean for subsequent machining operations that may be required.

BREVITY—Identify by IEN - 8144 if you write the maker

HANDLING . . Nesting steel skid made of welded parts, specified sizes

Source: BLOOM SYSTEM INC. 19429-33 W. Davison Ave., Detroit 23, Mich.

New design of skid frame has been developed by the company to permit stacking as shown in the illustration when no platform top is included. The company is prepared to supply the skid in required dimensions and load-handling capacities to specifications.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8145 if you write the maker

REDUCE YOUR FASTENING COSTS with

SEMS by SHAKEPROOF

WRITE FOR *Free* TEST KIT

To make every screw fastening operation faster, easier and more dependable specify SEMS-by-SHAKEPROOF. Specially designed Shakeproof Lock Washers are *pre-assembled* to machine screws to provide easy-to-handle units. You obtain greater locking power, greater tooth engagement and eliminate the possibility of washer canting as *extra* advantages.

ask for Kit No. 23 → test, try, and prove their merits. Write today!

SHAKEPROOF inc.
fastening Headquarters
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois
In Canada: Canada Illinois Tools, Ltd., Toronto, Ontario

BREVITY—Identify by IEN - 8146 if you write the maker

AUTOMATIC MERCURY CLUTCH

Performance-tested for Years on Thousands of Installations

for ELECTRIC MOTORS
- *SAVES starting current*
- *CUSHIONS motor starts*
- *PREVENTS motor damage*

for GASOLINE ENGINES
- *ELIMINATES stalling*
- *INSURES load-free starting*
- *PERMITS throttle control*

A Mercury Clutch not only improves the performance of appliances and equipment powered by electric motors and gasoline engines but also *adds to their saleability.*

For full information write today for Bulletin C-6.

Mercury Clutch Division
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 6, OHIO

BREVITY—Identify by IEN - 8147 if you write the maker

FILTER CLOTH

Dutch Weave Twilled — Dutch Weave — Standard Flexible

There's a Roebling Metallic Filter Cloth for your exact requirements

NO MATTER WHAT your filtering problems, you'll get maximum efficiency and top service economy with the *right* Roebling Metallic Filter Cloth. Roebling makes Filter Cloth from an exceptionally wide range of metals and alloys...in every practical weave and mesh. Those pictured above have the strength required for higher pressures or vacuum. They're smooth-woven and easy to clean; readily adaptable for nearly any type of filter.

Send for full information about Roebling Metallic Filter Cloth. And let us discuss you particular problems and furnish samples.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 8148 if you write the maker

PRECISION THREADING

Faster Production! • Reduced Fatigue!

OSTER

No. 902 "RAPIDUCTION" BOLT MACHINE

● Production threading of bolts, pipe, nipples, etc., is performed on this machine. Two spindle speeds obtained without change of sheaves due to multi-speed motor. Automatic tripping and re-setting device for die-head and lead screw eliminates the "human element" in determining the exact moment the die-head should be opened and lead screw disengaged to obtain desired length of thread. No. 902 "RAPIDUCTION" has a standard bolt range N.C. ½" to 2"; 12 pitch or finer ½" to 2¼". Pipe or nipple range ¼" to 2". Complete details on request.

THE OSTER MFG. COMPANY
2053 East 61st Street • Cleveland 3, Ohio, U.S.A.

FIRST WITH THE BEST IN THREADING MACHINES

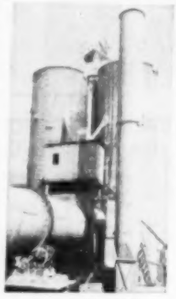
BREVITY—Identify by IEN - 8149 if you write the maker

Neff & Fry Silos

Carry Enormous Loads

• Shown in the accompanying photo are two 16' x 60' Neff & Fry Silos. Each holds 631 tons of crushed limestone. Conveying machinery is mounted directly upon the silos. An adjacent 16' x 47'6" silo, not shown in photo, holds 239 tons of coal and supports conveying machinery.

This installation exemplifies the distinctive strength which Neff & Fry Silos derive from their Super-Concrete Staves. The staves are formed under hydraulic pressure of approximately 140 tons, giving them rocklike density and load-bearing ability.



Neff & Fry Silos are being used for handling and storing 85 kinds of flowable bulk materials. Many of them have been in continuous service for more than 30 years with insignificant upkeep cost. They do not spall, rust, rot, or collapse.

Ask for our interesting folder, "Bins with the Strength of Pillars." It will be mailed to you.

THE NEFF & FRY CO. • 114 Elm St. Camden, Ohio

SUPER-CONCRETE STAVE STORAGE BINS ◀ NEFF & FRY

BREVITY—Identify by IEN - 8150 if you write the maker

Here's BIG NEWS on Blast Cleaning Dust Control Precision Finishing

Blast Cleaning Unit is PORTABLE! Hydro-Finish SPEEDS POLISHING!

Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from $170.00 and up.

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from $1295.00 and up.

STOP DUST at the SOURCE! COMPACT Blast Cabinet for SMALL WORK!

Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from $286.00 up.

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from $315.00 and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

Check for more information
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Unit Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 3300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked at the left.
Name.....
Company.....
Address.....
City.....Zone....State.....

BREVITY—Identify by IEN - 8152 if you write the maker

CONVEYING . . Pneumatic passer for hot rivets to a point of use

Source: PENNSYLVANIA FLEX. METALLIC TUBING CO. 7202 Powers Lane, Dept. RPI, Philadelphia 43, Pa.

New design of treadle-mounted operating valve and a new head unit with an improved counterweighted trap door are announced by the company for its pneumatic hot-rivet conveyor, previously described IEN-4064-37. The equipment will handle rivets from ½ to 1⅛ in. in diameter and of any usual length. It delivers to distances 150 ft. away from the point of rivet insertion into the connecting flexible metallic tube. Travel speed is about 15 fps. with delivery up, down, horizontal and around curves. A feature is in the fact that scale is removed from the hot rivet in passage through the tubing so it reaches the receiver fitting clean and ready to drive.

A heated rivet is inserted through the inlet valve on top of the tank. It falls into the tube and a valve hinges shut of its own accord. When the operator steps on the treadle valve, compressed air is released behind the rivet to carry it through the tube to the receiver fitting. The tank connects to a shop air line for pressure supply.

BREVITY—Identify by IEN - 8153 if you write the maker

VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: SPO INC. 6452 Grand Division Ave., Cleveland 25, Ohio

Series 80 has been added to the company's line of vibrators, previously described IEN-1294-51. Operation is on 80-lb. pressure. Overall length is 8⅜ inches. Weight is 21 pounds. A ⅛ or ¼-in. straight or elbow hose fitting can be specified in either steel or brass. An air line lubricator and knee or hand-operated control valve also are available.

Construction includes a cast semi-steel body, alloy-steel ribbed head and four connecting bolts. A bronze cylinder liner is standard equipment. Operation can be either horizontal or vertical.

BREVITY—Identify by IEN - 8154 if you write the maker

MOTOR CONTROL . . By electronic means, new 360-page book also describes welder control

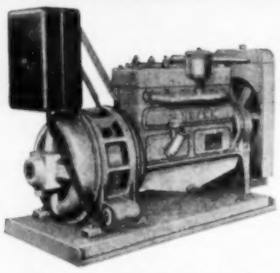
McGraw-Hill Book Co.
330 W. 42nd St., New York 19, N. Y.

George M. Chute, application engineer for General Electric Company, is author of new "Electronic Motor and Welder Controls", list price $6.50. The book describes electronic control equipment for position, speed, register, sequence welding, synchronous timing, seam welding, temper welding.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8155 if you write the maker

SCHRAMM Unistage AIR COMPRESSOR



BUILT-IN MOTOR DRIVE WITH STARTER AND COOLING UNIT

Mounted as a single unit on a substantial steel base which will serve as foundation. Size and type for every requirement from ⅓ to 100 h.p. Write for Catalog 5110.

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

BREVITY—Identify by IEN - 8156 if you write the maker

THAT'S THE TICKET!

CLEANING SCHEDULE

JOB	USE
TEXTILE MACHINE PARTS	IMMUNOL
METAL WORKING PARTS	IMMUNOL
PLASTIC, WOOD, GLASS	IMMUNOL
GENERAL MILL HOUSEKEEPING	IMMUNOL
PAINTED SURFACES	IMMUNOL
A THOUSAND AND ONE INDIVIDUAL JOBS	IMMUNOL

IMMUNOL

FOR CLEANING, WETTING OUT AND RUST PROTECTION IN A SINGLE OPERATION

A small quantity of IMMUNOL added to any kind of tap water produces a powerful, practical detergent that rustproofs as it cleans. This different solvent cleans without any accompanying odor, toxicity, fire hazard or corrosion. There are no soaps or alkalies in IMMUNOL, and it will not separate under any conditions of practical use. IMMUNOL solutions leave a thin, invisible film which preserves bright finishes on cleaned parts. Parts may also be painted or lacquered without further treatment.

For the complete story of how IMMUNOL can answer your cleaning, rustproofing and wetting out problems in a single operation, send for our brochure. ASK FOR:

"IMMUNOL SOLVENT"

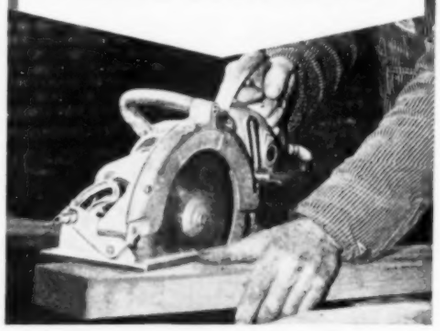
Haas MILLER Corporation

4th and Bristol Streets Philadelphia 40, Pa.

BREVITY—Identify by IEN - 8157 if you write the maker

SKIL Saw Model 825

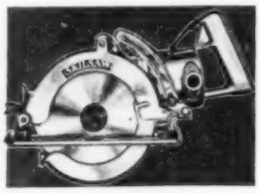
SPEEDS AND SIMPLIFIES MAINTENANCE WORK



Put powerful SKIL Saw Model 825 on your maintenance staff, get the same efficient service for daily repair and remodeling that original construction requires. It pays . . . pays in saved time, simplified operation and continuous heavy-duty service. This saw makes all cuts with simple base adjustments. Cuts ½" aluminum, copper and lead sheets, metals, stone, tile and composition materials when special SKIL blades are used. Recommended for use with SKIL Radial Support.

SKIL Saw Model—825

Heavy duty 8¼" saw. Withstands continuous hard usage. Base adjustments: 0" to 2⅝" vertical depth of cut; 0° to 45° bevel adjustment; 2⅛" depth of cut at 45°. Blade speed: 3000 r.p.m., no-load. Overall length: 18" Weight: 17¼ pounds.



Model 825 is one of ten SKIL Saw models . . . a saw to fit every cutting job. Call your SKIL Distributor for complete information or a demonstration in your plant.

SKIL Products are made only by SKILSAW, INC., 5033 Elston Ave., Chicago 30, Ill.

SKILSAW Factory Branches in Principal Cities
In Canada: Skilsaw, Ltd., 3601 Dundas Street West, Toronto 9, Ont.

SKIL PORTABLE TOOLS

BREVITY—Identify by IEN - 8159 if you write the maker

SPEED HAND-LABELING ON HARD-TO-LABEL JOBS with Mystik Self-Stik LABELS

SPEED PRODUCTION—No moistening. Stick instantly.

EASY APPLICATION on hard-to-reach, hard-to-label surfaces.

FLEXIBLE and stretchable for curved or uneven surfaces.

PERMANENT—Resistant to stain, moisture, scuffing, delamination. Removable, if desired, without staining.

BEAUTIFUL—Finest color printing; die-cut; embossed; varnished or acetate laminated.

The outstanding qualities of MYSTIK LABELS are due to rubber-saturated stock and the strongly bonded rubber adhesive, providing strength, flexibility, toughness, strong adhesion and ease of handling. Write for full information and samples.

CHICAGO SHOW PRINTING COMPANY CHICAGO • NEW YORK

2644 NORTH KILDARE • CHICAGO 39

BREVITY—Identify by IEN - 8160 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 8162 if you write the maker

TRUCK . . Load clamp attachment for company's fork trucks, rates 3 ton

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Hydraulic pressure is employed to open and close the jaws on a new clamp the company has developed for use on its power-lift fork trucks. The self-centering arms move laterally from 17 to 66 in. in load-handling spread and will secure a 3-ton load. Application can be made with a rotating mechanism to pick up a load and turn it over. A feature is the fact that the arms move equally away from and toward center to keep the load centered with reference to the truck.

BREVITY—Identify by IEN - 8163 if you write the maker

CORROSION PROOFING . . Liquid acts chemically on ferrous products

Source: DETREX CORP.
P. O. Box 501-A, Detroit 32, Mich.

Meets Specification
57-0-2C
Type 2 Class B

Perm-Cote trade names new phosphate-coating material for corrosion-proofing treatment of iron and steel products. Examples are metal fasteners, springs, hardware and hand tools, appliances, sheet-metal parts, clips and links, shelves. The work is immersed in the solution for chemical surface conversion to a dark gray uniform non-metallic phosphate coating. This coating is impregnated after it has been rinsed by application of a rust-proofing oil known as Perm-Oil. The resulting surface is dry to touch.

BREVITY—Identify by IEN - 8164 if you write the maker

MARKING . . Steel type holder applies standard type on convex surface

Source: ACROMARK CO.
7 Morrell St., Elizabeth 4, N. J.

Tapered spacers are employed between straight-side type in this new holder. They position the type so a convex surface can be marked. The holder is made of steel. Type and spacers are held in place by a spring-backed clip on one side. Standard sizes from stock take 4, 6, 8 and 10 pieces of type in sizes ranging by 32nds from $\frac{1}{32}$ to $\frac{1}{4}$ inch. Curvature is subject to specification. Hercules concave holder is the designation. Designs for hand use or press application are available.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8165 if you write the maker

MEASURE OVER 50 LIQUIDS WITH METER SURETY

You can batch mix, blend or process most any liquid with Rockwell industrial meters. You can do it quicker and more accurately. You'll gain the safety of a closed piping system. *You'll save money!* Get facts now. Ask for bulletin.

Sizes ½ to 3" in suitable materials. Option on type of register. Automatic shutoff controls available.

Dept. E

ROCKWELL MANUFACTURING CO.
Pittsburgh 8, Pa.

BREVITY—Identify by IEN - 8166 if you write the maker

THIS ELEVATOR BUCKET CANNOT FAIL TO EMPTY

ON EVERY TRIP!

PEKAY Self-Cleaning **BUCKETS** *can't* retain Sand-Coal-Gravel or other granular materials, even if close-packed. Separately mounted Stripper-Plate *must* push up and out when it starts over pulley radius . . . gives irresistible leverage to dislodge and sweep out bucket contents. **CONTROLLED-CAPACITY DELIVERY . . . MORE MATERIAL AT SAME OR FASTER BELT SPEEDS . . . .** *Easy to Install . . Saves Belts . . Cuts Maintenance.* **THOUSANDS NOW IN USE.**

★*Send for prices today—Quick delivery—(Give present bucket size)*

PEKAY MACHINE & ENGINEERING CO.

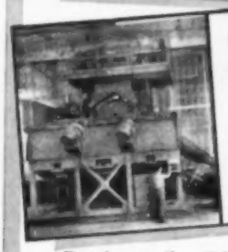
500 N. LASALLE ST. • CHICAGO 2, ILLINOIS

BREVITY—Identify by IEN - 8167 if you write the maker

Let PANGBORN Solve your Blast Cleaning Problem!

BATCH Cleaning: For top-economy batch cleaning specify Pangborn ROTOBLAST* Barrels. Sizes available from 3½ to 28 cubic feet. All models have push-button operation, automatic abrasive recovery and automatic loading device.

SEMI-CONTINUOUS Cleaning: Specify Pangborn ROTOBLAST* Tables. Type LF cleans flat castings; type LG cleans intricate pieces. Type LH, with two tables, lets operator load one table while work is cleaned on the other.



CONTINUOUS Cleaning: Pangborn Continuous-Flo ROTOBLAST* Barrels and one man provide uninterrupted cleaning. Loading and unloading is automatic, work is cleaned as it moves through Barrel.

Pangborn offers ROTOBLAST* equipment for every cleaning need. Full details on Tables, Barrels, Table-Rooms and Rooms are included in Bulletin 214. For your free copy *Mail Coupon Today!*

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

Pangborn *Trademark of Pangborn Corporation

BLAST CLEANS CHEAPER with the right equipment for every job.

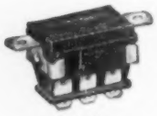
PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen. Please send me Bulletin 214 without obligation.

Name.....
Company.....
Address.....
City.....Zone.....State.....

BREVITY—Identify by IEN - 8169 if you write the maker

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS of proven quality!

P-406-CCT



S-406-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

Information on complete line, in Jones Catalog 18: Electrical Connecting Devices, Plugs, Sockets Terminal Strips. Write

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION CINCH MANUFACTURING CORPORATION CHICAGO 24 ILLINOIS SUBSIDIARY OF UNITED-CARR FASTENER CORP.

BREVITY—Identify by IEN - 8170 if you write the maker

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION — FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

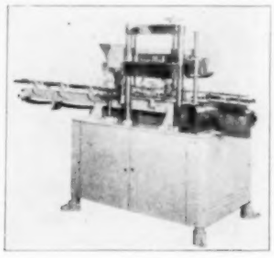
Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 8172 if you write the maker

PACKAGING . . Automatic machine applies paper or metal foil labels

Source: MRM CO.
189-93 Berry St., Brooklyn 11, N. Y.



Operation is at speeds to 75 containers per min. for the company's new automatic labeling machine. It takes labels from a magazine, applies glue, places each label, wipes it in place as the containers move through. Labels are introduced into the machine in cartridge containers. Adjustments provide for labels from postage-stamp size to 5 by 5 inches.

The machine takes containers made of cardboard, glass, metal, plastic, tin. If no container enters the delivery star, vacuum is cut off and the machine stops. Floor space occupied by the new machine measures 3 by 7½ feet.

BREVITY—Identify by IEN - 8173 if you write the maker

TRUCK . . Automotive trailer to transport explosives around a plant

Source: TRAILMOBILE CO.
Robertson & 31st Aves., Cincinnati 9, Ohio

Special construction to guard against sparks that might result in an explosion characterize this special new automotive trailer. It is designed to transport explosives about a plant area. It is not for use on the public highways.

Aluminum stripping is installed around the doors. Electric wiring is carried in metal conduits on the outside. The forward end support can be lifted and lowered by the driver while in his tractor cab for connection to or detachment from the tractor.

BREVITY—Identify by IEN - 8174 if you write the maker

MINING . . Non-explosive cartridge, electrically actuated, breaks coal by gas pressure

E. I. duPont deNemours & Co.
Room 2518, Nemours Bldg., Wilmington 98, Del.

"Chemechol" is trade name of new cartridge assembly now in transition from laboratory to field testing. It consists of a steel tube with one end closed, a chemical charge, and a rupture disc at the open end. Electrical wires connect to the charge through the closed end. The cartridge is placed in a hole drilled in the coal face.

An electric current is passed into the charge to start a chemical reaction. Heat destroys the wires to break the circuit. Continued reaction builds up pressure until the disc ruptures. Then the compressed gases rush out into the coal to break it into coarse pieces. The tube is recharged and used repeatedly. An assembled cartridge cannot be detonated.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8175 if you write the maker

MEET MY PAL, "THE BOXER!"

He weighs only a little over four pounds . . . even a 'cub' can operate this new International Retractable Anvil Staple Machine.

THE BOXER Staples filled cartons from the outside. A magazine holding 100 King-sized Staples, a new penetration and clinch control, and a new low price . . . these are some of the features which all add up to a neater, tighter, more uniform, more economical carton closure for you!

Write for a demonstration at no obligation!

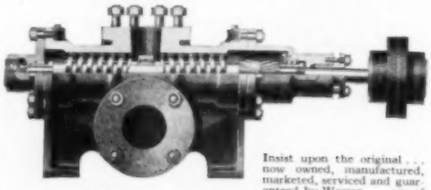
INTERNATIONAL STAPLE & MACHINE COMPANY
HERRIN 5, ILL.

DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 8176 if you write the maker

Quimby the original SCREW PUMP and why they are still preferred:

- 100% Antifriction Bearing equipped
- Quadruplicate Non-Slip Screws
- Balanced Power, Pulseless Discharge
- Smooth Running and Quiet
- No Stuffing Box Trouble
- Direct-Connected to Drivers
- Ninety Types available
- Herringbone Driving Gears
- No Metallic Contact
- Positioning Bearing



Insist upon the original . . . now owned, manufactured, marketed, serviced and guaranteed by Warren . . . one of America's pioneers of the pump industry.

WARREN QUIMBY PUMPS

CENTRIFUGAL, RECIPROCATING, SCREW, ROTARY
WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. • 62 Bridgeo Ave. • Warren, Mass.

BREVITY—Identify by IEN - 8177 if you write the maker

Cut Your Downtime on mill roll changing to 1 Minute or Less with the NEW B&S SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N.Y.

THE B & S #55 SHAFTLESS BACKSTAND features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.
Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N.Y.

BREVITY—Identify by IEN-8179 if you write the maker

here's your ANSWER to the

colored wire shortage!

E-Z CODE WIRE MARKERS simplify the assembly of wiring circuits by number or standard NEMA color code—answer problems created by a colored wire shortage. They maintain accuracy...minimize rejections...simplify inspection...and get the most from new, inexperienced employees, even when assigned to the most complicated wiring projects. E-Z Codes, with the exclusive Speed-Tab, are faster to remove from carrying card, quicker to apply *(without moistening)* and adhere permanently to wire and cable, even when pulled through conduit. They are unaffected by heat and humidity. E-Z Codes are the efficient, low-cost answer to your colored wire shortage problem.

WRITE FOR SAMPLES TODAY!

WESTERN LITHOGRAPH CO.
600 East Second Street
Los Angeles 54, Calif., Dept. IEN-8
740 Luckystone Avenue
St. Louis 22, Mo.

BREVITY—Identify by IEN-8180 if you write the maker

WE SELL AIR!

Billmyre BLOWERS and EXHAUSTERS

For Air or Gas

Centrifugal Type . . . Single and Multi-stage . . . ½ lb. to 7 lbs. pressure . . . ½ h.p. to 500 h.p.

Constant pressure maintained—no controls or regulating devices required for power, pressure or relief.

No internal lubricant required—hence, air is delivered clean and dry.

APPLICATIONS

Agitation and Aeration, Cooling and Ventilation, Combustion, Gas and Acid Manufacturing, Conveying, and other applications with various pressure or vacuum requirements.

HALF-CENTURY OF EXPERIENCE

Our engineering staff is at your command. Call on us when you have an air-moving problem.

LAMSON

Bulletin B-5 gives descriptions, applications, and specifications. Free—send for it today. Write: Lamson Corporation, Billmyre Blower Division, 442 Lamson St., Syracuse 1, N. Y.

BREVITY—Identify by IEN-8181 if you write the maker

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND

FLO TRUK

• An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.

The HAULER for cases, crates, tote boxes, etc.

The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

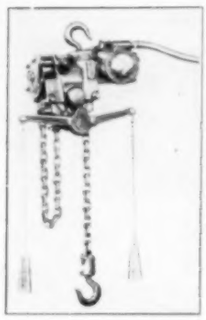
IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN-8182 if you write the maker

HOIST . . Pneumatic chain design, four load ratings, 300 to 1,000 pounds

Source: CHICAGO PNEUMATIC TOOL CO.
8 E. 44th St., New York 17, N. Y.



Rotary vane motor for operation nominally on 90-lb. air pressure drives gearing connecting to the load-chain sprocket in this new hoist. The gears are heat treated except the aluminum-bronze worm gear. All moving parts are mounted on ball or roller bearings. The worm gear provides self-locking action so no separate brake is required to hold a load. Control centers at a poppet-type valve for pendant-chain operation. Total weight of the hoist, in all four load ratings, is 57 pounds.

Type LCH employs a link-type load chain as shown in the illustration. Type RCH is equipped with a roller-type chain with desirable anti-friction characteristics but limited to application in which the load chain is not subject to side pull. Standard chain length is 12 ft. and standard maximum lift is 10 feet. Minimum distance, hook to hook, is 17 inches.

Lift speed ranges from 70 to 20 fpm. on 90-lb. pressure over the four load ratings. Lowering speed is 130 to 42 fpm. Both hooks are equipped with swivels. The one-piece housing maintains alignment of the moving parts. Overall dimensions for all four capacities of 300, 500, 700 and 1000 lb. is 15⅝ in. in width by 9 in. from front to back. List price is $290 with load and control chains, strainer, lubricator, muffler.

BREVITY—Identify by IEN-8183 if you write the maker

COMMUNICATING . . Remote station signals when it is connected to master

Source: EXECUTONE INC.
415 Lexington Ave., Room 1301, New York 17, N. Y.

New design of the remote station in the company's assembly of master and remote communicating units includes a signal lamp in the lower left-hand corner of the housing face. This lamp connects into the circuit to light when an individual at a master station closes the circuit to the remote unit. The lighted lamp indicates to the remote-station user that the circuit is closed and that his voice will be audible at the master station.

The arrangement prevents eavesdropping on the part of an individual at the master station. It also signals the user at the remote station that someone may be wishing to speak to him directly so he can hold himself in readiness to reply. It is not necessary that he be at the station itself as he can reply from across a room. Overall dimensions of the new unit are 6 by 3½ by 6½ inches. The housing is bronze finish.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-8184 if you write the maker

PULLMAX

Sheet and Plate Working Machines

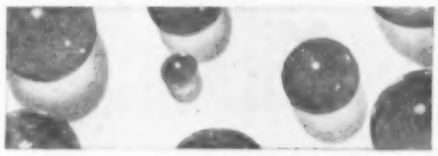
Imagine, one machine doing all of these operations—seven models that work the finest gauges up to 11/32" (in mild steel). Also ideal for working stainless, non-ferrous metal, wire mesh. Leaves a smooth perpendicular cut with no further finishing required. Pullmax does it better . . . faster.

WRITE FOR ILLUSTRATED CATALOG

AMERICAN PULLMAX CO., INC.
2631 N. Western Avenue • Chicago 47, Ill.

BREVITY—Identify by IEN-8185 if you write the maker

NOW—Precision Balls of Synthetic Sapphire



These balls of synthetic sapphire, polished to within 20 micro-inches of sphericity, are resistant to wear, heat, and corrosion. In many applications they need not be lubricated.

Available in 1mm, 1/16 inch, ⅛ inch, and ¼ inch sizes, and in three surface finishes.

PROPERTIES

Coefficient of Friction	0.140
Hardness (Knoop)	1525-2000
Dielectric Constant	7.5-10
Modulus of Rigidity	21.5-27.5 x 10^6 psi
Thermal Coefficient of Expansion at 50 C (per C x 10^6)	5.0-6.7
Chemical Resistance	Unaffected by acids, dilute alkali.

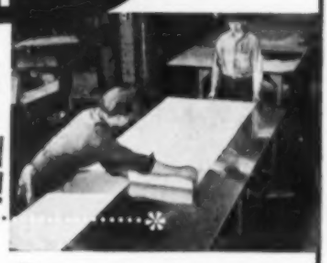
Call or write any LINDE office for information on these balls or the other forms of synthetic sapphire.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

BREVITY—Identify by IEN-8186 if you write the maker

Mystik Protecto-Mask

SAVE that polished surface!



Here's sure protection for those expensive, highly polished surfaces—stainless steel, aluminum, plastics, many more!

• Keep them protected during *fabrication, storage, in shipment.* • MYSTIK Protecto-Mask is *Self-Stik* . . . goes on easily from the roll to surface, peels off easily. Leaves no residue. • Protects against scratches, and production damage . . . cushions blows . . . shields against splatter from welding arc. Can be used for layout and diagramming.

Ask your supplier or write for full information and sample. Mystik Adhesive Products, 2644 N. Kildare, Chicago 39.

BREVITY—Identify by IEN-8187 if you write the maker

85,000 R.P.M.!

ARO GRINDERS for Modern Metal Alloys!

HIGH SPEED...with SAFETY!

ARO
AIR TOOLS
Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

ARO's famous Turbine Grinder Model 7335 with Erickson precision collets . . . greater gripping power for *greater safety* at high grinding speeds. 1/64" to 1/4" sizes. Excellent for carbide burr work and small mounted points. Write for catalog.

The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 8188 if you write the maker

Cut Costs with MEAD MIDGET Air-Clamps!

Horizontal and Vertical!

Pneumatic Cylinders

Both models deliver 80 lbs. pressure on a line pressure of 100 lbs. They'll save countless man-hours in assembly operations involving welding, riveting, bolting, etc. *Advantages over mechanical clamps:* 1. Any number can be operated by single master valves. 2. Easily installed in cramped corners. 3. Equal ram pressure at any stroke point.

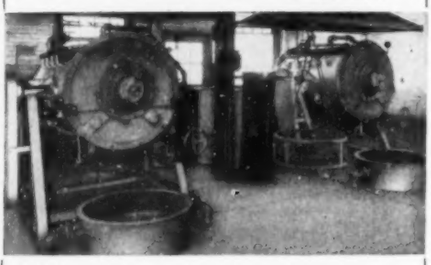
Send for new Mead AIR POWER Catalog, describing our line of Air Clamps, Air Vises, Air Presses, Work Feeders, Valves, Controls, etc.

MEAD SPECIALTIES COMPANY

4114 NO. KNOX AVE., DEPT. E-81-A, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 8189 if you write the maker

BALL BEARINGS ARE CLEAN HARDENED IN THESE AGF CARBURIZERS



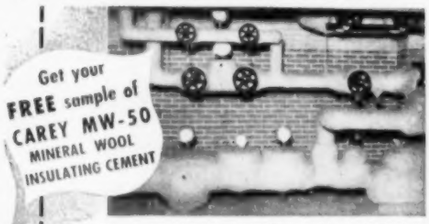
This is part of an actual installation of AGF No. 2GA Carburizers at work in continuous clean hardening of Ball Bearings.

For absolute uniformity of large production hardening or other controlled atmosphere treatment of small parts, you can always depend on AGF equipment.

Write for Bulletin No. 1211A

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN - 8190 if you write the maker



Insulating irregular surfaces, valves, fittings, expansion joints, heaters, exchangers, access doors, water tube boiler walls, tanks, stills and many other pieces of heated equipment is no problem with Carey MW-50 — the all-purpose insulating cement anyone can apply. MW-50 provides superior insulation value of mineral wool, toughness of asbestos fiber reinforcement and application ease of a very plastic and sticky cement. It adheres to hot or cold surfaces, absorbs expansion and contraction strains.

See for yourself! Send for data sheet and generous 5-lb. FREE sample to test in your plant.

Carey THE PHILIP CAREY MFG. CO., CINCINNATI 15, OHIO

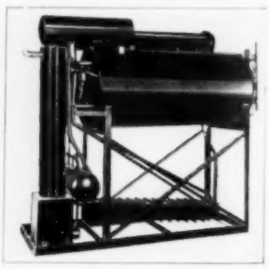
The Philip Carey Mfg. Co., Cincinnati 15, O. Dept. IEN-8
Gentlemen: Please send me FREE 5-lb. sample of MW-50 insulating cement and data sheet.

Company Name _____
Address _____
Your Name _____
Position _____

BREVITY—Identify by IEN - 8191 if you write the maker

REFRIGERATING . . Absorption unit chills water for heat exchange uses

Source: SERVEL INC.
117-21 No. Morton Ave., Evansville 20, Ind.



Water is chilled as it is circulated through a closed circuit in this new absorption-type equipment for purposes such as lowering temperature of the air inlet to a compressor, removing heat from coolants employed in machining operations, lowering the temperature of fluids for processing, serving in air conditioning installations by alternately using the water and then re-chilling it in the closed circuit.

The equipment rates 25 ton of refrigeration, has total capacity of 300,000 btu. per hr. based on standard ASRE rating procedures of condensing-water supply at 75 deg. F. and water entering to be chilled at 50 deg. F. to leave at 40 deg. F. Condensing-water requirements are 63 gpm. Dimensions are 30 by 90 by 84 inches. Weight is 2,500 pounds.

Steam can be supplied from any source, often one that would otherwise represent waste. Pressure is at 2 lb. or more with consumption rating from 232 to 464 lb. per hr. depending on rate of operation. Several units can be assembled in multiple to serve requirements calling for greater capacity than is represented in one.

The water to be chilled enters a coil inside the evacuated hermetically-sealed absorber-evaporator chamber. The refrigerant, also water, is distributed in the chamber, over the outside of this chilled water coil. Evaporation of the refrigerant water takes place in the high vacuum that exists at this point, removing heat from the water in the coil so the chilled water issues from the coil at reduced temperature for process purposes. Lithium bromide, the absorbent for water vapor formed by evaporation of the refrigerant water, is distributed over the outside of an absorber coil also contained within the absorber-evaporator chamber. It absorbs the refrigerant water vapor and flows with it from the chamber to the generator.

Steam is introduced to surround the generator and drive water vapor out of the mixture. This vapor flows to the condenser where it then returns to the absorber evaporator chamber to be used again. The weak lithium-bromide solution flows back through its own tube circuit for repeating distribution in the chamber over the absorber coil. No pumps or other moving parts are used in the refrigerating process. The chilled water circuit is served by the user's pump.

Bulletin, 24 pages, "Model DUT 25-Ton Water Chiller Equipment Data," presents illustrated detail information including a flow diagram, dimension data, capacity data and performance curves, connection diagrams and explanation of the control circuits, schematic wiring diagram, and various views of the unit assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?

Try the hundreds of listings in the index, page 102

BREVITY—Identify by IEN - 8192 if you write the maker

The Bulkbinder No. 602 stretcher is especially designed for steel strapping of bundles of rod or tubing. Tool weighs only 6 pounds, has a built-in cutter and will apply ¾" x .035 or 1¼" x .035 strapping. Ask about our demonstration offer.

G-8 Strap Calculator. Write for your free copy.

STEEL STRAPPING

A. J. Gerrard & Co.
1950 Hawthorne Blvd., Melrose Park, Illinois
(Chicago Suburb)

BREVITY—Identify by IEN - 8193 if you write the maker

A FAST WAY TO REDUCE COSTS

Capacities from ⅛ to 1 ton
110, 220 or 440 volts

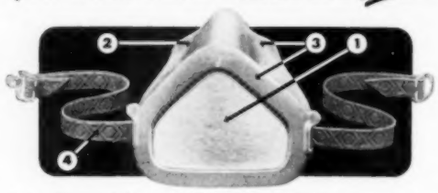
Hundreds of plants are cutting overhead with the CM COMET... a sturdy, high-speed, portable electric hoist. All working parts fully enclosed and permanently lubricated. Don't buy until you see the CM COMET. Ask your local distributor for a demonstration.

Write for Bulletin 138 Get all the facts

CHISHOLM-MOORE HOIST CORPORATION
(Affiliated with Columbus-McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

BREVITY—Identify by IEN - 8194 if you write the maker

4 Reasons why FLEX-A-FOAM (and *only* FLEX-A-FOAM) provides Dust Protection your workers will welcome and *Wear*



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.

2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.

3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.

4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

Sample $1.40 postpaid

★ Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 8195 if you write the maker

ERTEL STAINLESS STEEL SELF-PRIMING PUMP

For pumping corrosive liquids, chemicals, drugs, cosmetics, foods, syrups, wines, whiskeys, pharmaceuticals, vinegar, etc.

MODEL ESP

★ Capacities 3, 5, 10, 20 and 30 gpm. Perfect alignment of the minimum of moving parts. Has manual by-pass control valve to easily regulate pressure and flow rate. Available as illustrated or as complete assembly direct drive or belt driven. Please ask for Pump Bulletin #34.

ERTEL SERVICE: We invite you to make use of our consultation service. Our engineering staff is always available to help in solving your Liquid Handling problems.

ERTEL ENGINEERING CORPORATION
KINGSTON NEW YORK
Representatives in Principal Cities

MANUFACTURERS OF HIGH GRADE ERTEL ASBESTOS FILTER SHEETS
ASBESTOS SHEET FILTERS • CYLINDER TYPE DISC FILTERS
PYROGEN FILTERS • VACUUM BOTTLE FILLERS • MIXERS • CAPPERS
CENTRIFUGAL AND SELF-PRIMING STAINLESS STEEL PUMPS

BREVITY—Identify by IEN - 8196 if you write the maker

BOOST PRODUCTION

COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

BREVITY—Identify by IEN - 8197 if you write the maker

FOR HEAVY-DUTY PERFORMANCE

SPECIFY

SNAP-LOCK
TRADE MARK

The Limit Switch That's Five Ways Safer

Precision, positive action and dependability under the extremes of heavy-duty service—that's the performance *plus* you can expect from every National Acme Snap-Lock Limit Switch. Here are the exclusive design and construction features that give this added performance, *added safety:*

1. SNAP make and break (fast acting—accurate)
2. Pure silver self-wiping contacts (no arcing)
3. Positive on or off locking (can't stop on dead center)
4. Separate sealed electrical and mechanical side (for added safety)
5. Hardened steel moving parts (for greater strength longer life)

Snap-Lock Limit Switches are built in a variety of types and sizes to suit every industrial application: special mountings are available. May we show you how they can be designed into your product?

NATCO—ANOTHER PROOF

This Two-Way NATCO drilling and tapping machine uses seven Namco Type 16D 1200-2 Snap-Lock Limit-Switches. Snap-Lock is the *only* limit switch made by a machine tool builder, for the kind of punishment machine tool service dishes out—*and over 80% of the nation's machine tool builders use Snap-Lock.*

The complete range of Namco standard Snap-Lock Limit Switches is illustrated and tabulated in Bulletin EM-50. Ask for your copy

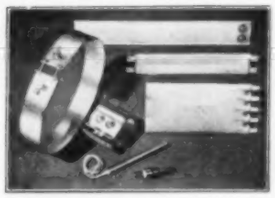
ELECTRICAL MANUFACTURING DIVISION
178 East 131st Street • Cleveland 8, Ohio

NATIONAL ACME
CLEVELAND, OHIO

BREVITY—Identify by IEN - 8199 if you write the maker

HEATING . . Electric elements assembled in cases made of aluminum

Source: ACRA INDUSTRIAL ELECTRIC CO.
3003 Ravenswood Ave., Chicago 13, Ill.



Band type, flat type and immersion units, comprising the company's line of electric heating elements, previously described IEN-3205-50, are now available in metal enclosures made of aluminum. These units are particularly designed for use in aircraft. The band-type elements are in widths to 12 in. and in diameters from 1¼ to 22½ inches. The flat strip design is made from 1 to 18 in. in width and in required lengths to 36 inches.

Each element employs resistors made of nickel-chromium wire with mica heater-plate insulation bonded together with shellac or other materials as specified. Operating voltage is also subject to specification. Temperature is to 625 deg. F.

BREVITY—Identify by IEN - 8200 if you write the maker

PAINTING . . Hand brushes made from company's synthetic bristle

Source: PITTSBURGH PLATE GLASS CO.
3219-23 Frederick Ave., Dept. BN, Baltimore 29, Md.

Will not soften in water paint

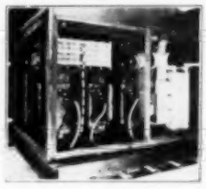
New design of the synthetic bristle for paint brushes, known as Neoceta, includes multiple small channels in place of the spiral twist in the original design. These channels provide for retention and delivery of paint and make the bristle essentially identical in action with Chinese hog bristle.

The strands are extruded simultaneously in large numbers and are cut in double lengths of finished size. These lengths are wrapped and cut in half. Then they are trimmed to accurate length and stored for a mixing operation prior to assembly of the finished brushes. A 4-in. Neoceta brush lists at about $3.15. A nylon brush of the same size lists at about $7 and a China bristle brush lists at about $8.10.

BREVITY—Identify by IEN - 8201 if you write the maker

RECTIFYING . . Selenium equipment, transformer and control for dc. supply

Source: BART-MESSING CORP.
226 Main St., Belleville 9, N. J.



Rating is 13,000 amp. with operation on 5 to 14 volts for this new selenium rectifier. It is hermetically sealed against corrosion and is controlled by saturable reactors and electronic circuits to maintain constant voltage in power supply for a plating operation. Overall dimensions are 10 by 7 by 9 feet. Weight is 6 ton.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8202 if you write the maker

POSITIVE GRIPS

THE "HAMMER-LOCK" and Electroline FITTINGS

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

BREVITY—Identify by IEN - 8203 if you write the maker

. . . about hand pumps. He's tried 'em all and he knows liquid handling from A to Z.

"Nothin' but Bowser for my jobs," Mike says. "They're always rarin' to go and they put it out fast without wearin' you out.

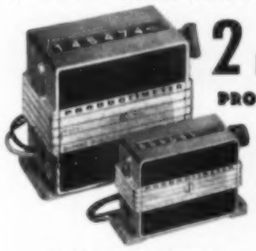
"Service? No sir! They're workin' fools—never had a wrench on 'em yet, and it's more'n five years."

Mike's experience is "run of the mill" for Bowser Hand Rotary Pumps. May we send you a folder that explains WHY?

BOWSER, INC., 1338 Creighton Ave., Fort Wayne 2, Ind.

BOWSER LIQUID CONTROL SPECIALISTS SINCE 1885

BREVITY—Identify by IEN - 8204 if you write the maker



2 NEW ELECTRIC PRODUCTIMETERS

"CS" and "Y" ELECTRIC PRODUCTIMETERS
The answer to all electric counting requirements

Two Companion Counters . . . Two Sizes . . . Hi-Speed . . . Accurate . . . Long Life . . . Totally Enclosed

Speeds of 1000 counts per minute. Both counters give maximum readability. Design fits all mounting conditions . . . panel mounting or base mounting. Hardened steel working parts for long life and dependability.

New type case for compactness, rigidity, and protection against dust and moisture conditions. Operate accurately over wide current fluctuations.

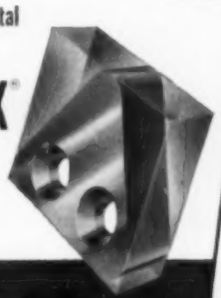
Write for "New Electrics" Bulletin

DURANT MANUFACTURING CO.
1930 N. Buffum St. Milwaukee 1, Wis.
130 Orange St. Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

BREVITY—Identify by IEN - 8205 if you write the maker

no waste metal with GRAMIX parts



Because Gramix parts are precision die-pressed from powdered metals to tolerances within .0005", they can be produced with minimum scrap waste. And they require little or no costly machining. Gramix parts can be oil-impregnated during manufacture to eliminate the need for regular oiling. Gramix parts are strong and tough, too. For complete details, write us today.

THE UNITED STATES GRAPHITE COMPANY
Division of The Wickes Corporation
SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 8206 if you write the maker

Get the ONE flexible coupling that gives you single chain simplicity plus divided rollers

ONLY Link-Belt "RC" Flexible Couplings give you both. Divided rollers of Precision Steel Roller Chain equalize load . . . maintain proper balance at high speeds . . . adjust to reasonable misalignment and end float. Single-chain width means simplicity and economy.

There's a Link-Belt Roller Chain Coupling for ratings from fractional to 1000 hp. For complete information, write for Folder 2363.

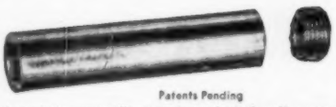
"RC" Couplings available in 30 sizes, ⅜ to 12 in. bore.

LINK-BELT
"RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in principal cities. 12,524

BREVITY—Identify by IEN - 8207 if you write the maker

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

BUSHINGS MADE IN FOLLOWING SIZES:
3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

BREVITY—Identify by IEN - 8208 if you write the maker

AT YOUR FINGERTIPS

A must for your bench — Horberg Drill Size, Pin Gages. Unlimited time and cost saving advantages in center and location finding, hole or slot gaging.

- Held Accurate to +.0001 −.0000
- Concentric tapered to fit holes .0012 smaller than gage size.
- 1½" in length for easy insertion
- Highest quality oil hardened tool steel
- In convenient indexed stand for quick selection

Letter sets of 52 gages, A-Z in pairs
Fraction sets of 60 gages, 3/64" to 1/2" in steps of 1/64" in pairs
Number sets of 120 gages, 1 to 60 in pairs
Individual gages in stock
Extra stands available

All Items Stocked for Immediate Delivery

FROM THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

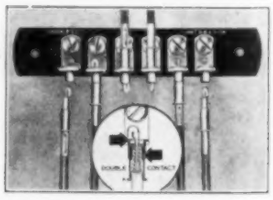
Quantity
____ Letter Sets @ $45.
____ Fraction Sets @ $30.
____ Number Sets @ $90.
____ Single gages @ $ 1.
____ Stand alone @ $10.

Please Rush checked items and literature to
Company ____
Address ____
Name ____
Title ____

BREVITY—Identify by IEN - 8209 if you write the maker

CONNECTOR . . Jack plug terminal self locking, 10 amp. on 110 volt ac.

Source: HARVEY HUBBELL INC.
Bostwick & State St., Dept. X-3, Bridgeport 2, Conn.



Plug terminal with a hook end is fitted with a spring-backed sliding-contact cup and clamps on the end of an electric conductor. The hook end passes through a mating sleeve fitting when it is entered into the sleeve and pressure is applied to cause the cup to retract against the spring. As soon as the hook end passes through the sleeve it permits lateral movement so the cup can enter the sleeve.

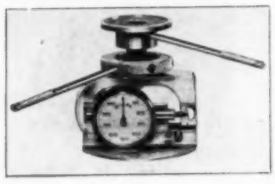
The two parts lock in this position to provide sliding contact between the sleeve and cup and end contact between the terminal and the inner sleeve shoulder. The terminal will remain in this locked position until the cup is pulled back. As soon as it leaves the sleeve the hook end will also slide out for complete disconnect. Contact pressure is maintained at 20 ounces by the spring. Vibration has no effect.

The connector is rated at 10 amp. on 110-volt ac. It is available with the required wiring tools. Overall length of the plug side is 1.062 inch. The sleeve that clamps on the conductor measures 0.136 in. in internal diameter. The outlet side carrying the sleeve measures 0.781 in. in overall length from the end of the mounting bracket to the outer end of the sleeve. Hubbell Interlock is the trade name. Samples, data sheets and test reports are available on request.

BREVITY—Identify by IEN - 8210 if you write the maker

GAGE . . Reads mechanical pressure, 9 ranges maximum at 10 to 5,000 pounds

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.



New jack attachment to apply compression loading has been developed and is illustrated in connection with the company's mechanical pressure gage, previously described IEN-2785-47. The jack permits application in locations where the gage must be brought to the load as in testing a spring-backed mechanism in which normal position of the spring is without load. Similarly the gage and attachment can be inserted beneath a machine element and the jack operated to transfer the load at that point to the gage to read the point pressure. Various types and sizes of the jack attachment are available.

The gage includes a spring-steel housing, dial indicator and contact head for the indicator. The housing is a closed elongated rectangle except for an opening at the end where the contact head is mounted. The indicator is secured to the closed end. Flexing the housing by compression moves the contact head, registers on the indicator in terms of pounds pressure. Largest assembly in the line measures 4⅝ in. in length, weighs 2½ lb., reads zero to 5,000 lb. in 50-lb. steps.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8211 if you write the maker

another new **Variac**® SPEED CONTROL
for ½ HP D-C Motors from A-C Lines

Selenium Rectifier — no waiting for vacuum tube to warm up — not necessary to idle rectifier for instant starting — practically indefinite rectifier life under ordinary operating conditions.
Uses Standard ½ HP Compound or Shunt Motor
Instant Starts—Extra fast Stops with dynamic braking
Single Switch conveniently located for "Forward", "Stop" and "Reverse"
Continuously Variable Speed Range down to zero at constant torque
Negligible Torque Pulsation
Excellent Regulation
Quick Starting under heavy Load

Type 1700-B
VARIAC Speed Control
$165.00

Write for VARIAC Control Bulletin

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39 Massachusetts
90 West Street · 920 S. Michigan Ave. · 1000 N. Seward St.
NEW YORK 6 · CHICAGO 5 · LOS ANGELES 38

BREVITY—Identify by IEN - 8212 if you write the maker

SELF -CONTAINED -CONTROLLED -SUFFICIENT -RELIANT

Stacon Temperature Regulator*

The patented Farris Stacon Temperature Regulator is easily the most independent regulator available today. It's unique. It stands alone. It's trustworthy. It needs no watching. It's perfect for the man who wants no cause for worry . . . who wants to relax in the sure knowledge that his temperatures are constant.

Here's why Stacon stands alone in the field. It has no packing glands to leak or bind . . . the stem moves freely. The liquid in the bulb flashes to vapor in the power bellows, assuring hairtrigger response to move the disc. It operates with unbelievable accuracy—to within plus or minus 1 degree—and it operates with that accuracy under *all* conditions. Stacon provides air-operated accuracy at low, self-operated cost.

Get the details on the one truly outstanding temperature regulator—Stacon. Send for Bulletin 50-1000 to get all the details.

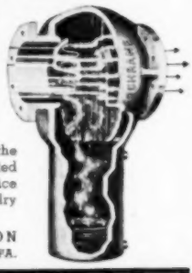
*Patented and Patents Pending

Farris Stacon Corporation
432 COMMERCIAL AVE., PALISADES PARK, N. J.

BREVITY—Identify by IEN - 8213 if you write the maker

Separating Oil from Exhaust Steam

COCHRANE ALL-SERVICE
SEPARATOR



Where exhaust steam is used for heating and deaerating feed water, the oil usually present in the exhaust may be practically eliminated by installing a Cochrane All-Service Separator on the inlet pipe. Clean dry steam is assured.

COCHRANE CORPORATION
3152 N. 17th St., PHILADELPHIA 32, PA.

COCHRANE
STEAM SPECIALTIES
SEPARATORS • DRAINERS • RELIEF VALVES • PURIFIERS • DISCHARGERS

BREVITY—Identify by IEN - 8214 if you write the maker

Bin Stuck Lately?

Don't ruin your Bins

Vibrate them with a TYPE F CLEVELAND AIR VIBRATOR

- Steel Chips . . . Dry Colors . . . Concrete . . . Fertilizer . . . Sand . . . Coal . . . Soap . . . Sawdust . . . Vegetables . . . Chipped Ice . . . Meat . . . Candy . . . Wood Chips . . .

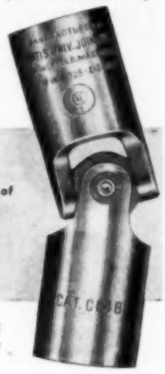
Or any other 'granulars' free up fast with a Type F Cleveland AIR Vibrator. Eliminate plugged or arched conditions. Write for Catalog No. 105 for complete details.

THE CLEVELAND VIBRATOR COMPANY

2737 Clinton Ave. · Cleveland 13, Ohio

BREVITY—Identify by IEN - 8215 if you write the maker

Don't tie up your men and machines fitting joints to your requirements



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since 1919 exclusively a manufacturer of
UNIVERSAL JOINTS
Can Save You TIME and MONEY!

14 sizes — 3/8" to 4" o.d.— in stock at all times and ready for immediate sample or volume shipments.

PLUS Every facility for special specification jobs. Free engineering data and price lists on request.

- Standard for heavy duty
- Lo-Friction for most exacting demands

Whatever your requirements, we invite your inquiry.

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5 Birnie Ave. Springfield, Mass.

BREVITY—Identify by IEN - 8216 if you write the maker

Handy work bench is a Bonus! with RIGID TRISTAND Pipe Vises

• It's right there when you need it—the handy workbench built into every Tristand. New tray keeps tools at your finger-tips—less stooping, easier work. Tray makes Tristand rigid—won't fold up in use. Legs have rubber feet to prevent travel. Lon-Grip tool-steel jaws won't slip, won't mar polished pipe and tubing. Yoke vise, 2½" capacity; chain vise, 4". Buy these new work-saver RIGID Tristands at your Supply House.

RIGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 8218 if you write the maker

MIXING . . Tumbling machine for 5 gal. pails, also causes rotation

Source: VOL-U-METER CO.
P. O. Box 54-A, Buffalo 16, N. Y.

Operation at about 30 rpm. for this new motor-driven mixing machine combines tumbling and rotating action on each complete revolution for a 5-gal. pail clamped in place in the holder frame. The pail is turned end for end by the chain-connected geared-head motor. It is rotated in the holder by a rubber-tired wheel contacting a track section on the side of the frame. The motor rates ¼ hp. and is available for specified standard electrical characteristics.

BREVITY—Identify by IEN - 8219 if you write the maker

SEALING . . Impregnating liquid for porous areas in non-ferrous castings

Source: ARCHER-DANIELS-MIDLAND CO.
2189-93 W. 110th St., Cleveland 2, Ohio

Detail information in Bulletin 501

Armetol is a new mixture of plastic resin and processed linseed oil. It is supplied as a low-viscosity liquid with which to impregnate porous non-ferrous castings in order to seal them so they will hold pressure. The liquid is packaged in 55-gal. drums and to it is added a small amount of a suitable catalyst prior to using.

Application follows a set procedure which the company has outlined for production or for maintenance operation. Included is a heating cycle for about two hr. at 275 deg. F.

The liquid cures to form a tough resinous plastic mass that will not soften and cannot be blown out. It withstands expansion, contraction and operating stresses without breaking. It is non-abrasive and will not dull tools employed in machining castings that have been treated.

BREVITY—Identify by IEN - 8220 if you write the maker

CUTTING . . Holder and bit for holes through steel, to 5 in. diam.

Source: ROBERT H. CLARK CO.
9328-32 Santa Monica Blvd., Beverly Hills, Calif.

Hole capacity has been extended from a maximum of 4 to 5 in. in this new design of the company's hole-cutting tool, previously described IEN-65-43. As in the initial tool, the holder mounts three tool-steel bits that can be set for a desired diameter.

Several tools in the line cover an overall range between ⅝ and 5 inches. Thickness capacity is maximum at 1 inch. The tool can be used on pipe to cut a clean hole through the curved surface. It works equally well on flat steel, cast metal, fibre. The center is removable for a pilot drill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8221 if you write the maker

for GREATEST DEPENDABILITY and EFFICIENCY in metered pressure pumping of
SULPHURIC ACID
...at all concentrations

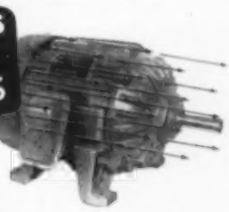
Pumps against line pressure . . . meters accurately . . . has no stuffing box, so eliminates leakage, prevents corrosion of pump or contamination of product, avoids loss of prime . . . lowest maintenance . . . Hundreds of satisfactory installations.

- NO STUFFING BOX OR RUNNING SEAL
- POSITIVE DISPLACEMENT PISTON MEASUREMENT
- FLOW RATE ADJUSTABLE WHILE IN OPERATION
- MANUAL OR AUTOMATIC CONTROL

Lapp PULSAFEEDER
PISTON-DIAPHRAGM CHEMICAL PROPORTIONING PUMP
WRITE for Bulletin 262 with complete description and specifications.
LAPP INSULATOR CO., INC., PROCESS EQUIPMENT DIVISION, 470 MAPLE STREET, LE ROY, N. Y.

BREVITY—Identify by IEN - 8222 if you write the maker

ALLIS-CHALMERS TEFC MOTORS



Get The Motor That Cleans Itself

MOTOR CLEANING OPERATIONS are practically eliminated and inspections and overhauls greatly reduced by this new Allis-Chalmers Type APZ totally-enclosed fan-cooled motor. Maintenance cost is a fraction of that on conventional design because internal air passages and dirt-catching pockets have been eliminated. If dirt does stick, it can be wiped or blown away without stopping the motor.

Rigid cast iron frame resists corrosion and holds bearings permanently in alignment. Bearings are pre-lubricated and should need no attention for years. However, provision for in-service lubrication is standard equipment.

Get more information from your Allis-Chalmers Authorized Dealer or District Office, or write Allis-Chalmers, Milwaukee 1, Wis. for Bulletin 51B6145.

ALLIS-CHALMERS A-C A 3403

BREVITY—Identify by IEN - 8223 if you write the maker

Costly shop errors are prevented HERE!

Cooper-Bessemer Corp., Mt. Vernon, Ohio, must send intermediates of required home office drawings to its branch factory in Grove City, Pa.

But they realize that poor intermediates—like poor original drawings—often produce illegible blueprints. And these can lead to costly errors in the shop.

Therefore, they don't take chances. They reproduce their drawings on Kodagraph Autopositive Paper . . . get positive photographic intermediates *directly*—as follows: (1) Exposure in a standard print-making machine; (2) development in standard photographic solutions. A *much* faster operation than is possible with any other type of photographic intermediate material.

LOW-COST INSURANCE AGAINST COSTLY SHOP ERRORS

The Grove City plant receives sparkling intermediates—every detail sharp and clear . . . with dense photographic black lines on a clean, white, evenly translucent base. Using these Autopositives as print-making masters, highly legible shop prints are produced . . . *at uniform, practical machine speeds.*

Other advantages which Cooper-Bessemer appreciates: Autopositives are photo-lasting . . . hold their detail through hundreds of printings. And they will not fade, become brittle, or otherwise deteriorate in the files.

Small wonder, then, that Cooper-Bessemer is sold on Autopositive—is extending its use at the home plant to protect 50,000 valuable original tracings against print-making wear and tear.

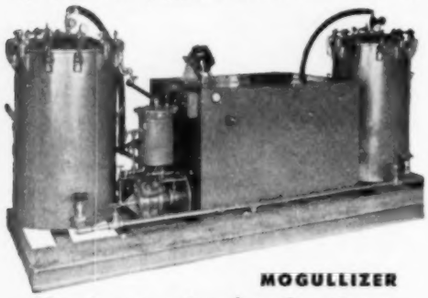
Learn all the ways this revolutionary new paper can help you.

Write for a free copy of the new illustrated booklet, "Modern Drawing and Document Reproduction."

Eastman Kodak Company
Industrial Photographic Division
Rochester 4, N. Y.

Kodak TRADE MARK

BREVITY—Identify by IEN - 8225 if you write the maker



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Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

Write today for full details on the Mogullizing system.

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THE HP-600
ARBOR PRESS

For EFFICIENCY and ECONOMY

For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Ram and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

Straightening attachment available at $4.95.

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Write for further information.

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Industrial CRANES

Industrial Double Girder Multiple Runway Cranes provide high hook lifts and long spans at lower cost.

Illustration shows 5 runway, 3 motor close headroom type—110 ft. span.

Write for 20 Page Fully Illustrated Catalog

Industrial CRANES

INDUSTRIAL EQUIPMENT CO.
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Representatives in Principal Cities.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

ADHESIVES . . Cold-setting liquids, ethoxyline-plastic base; properties and uses. "Araldite Types 101 and 102", 12 pages. Ciba Co., 627 Greenwich St., 1st Flr., New York 14, N. Y. **IEN-0934**

BEARINGS . . Impregnated-wood self-lubricating bearings for conveyor rolls; dimensions on 28 sizes. Data Sheet 200, 2 pages. Arguto Oilless Bearing Co., 99 Berkley, Philadelphia 44, Pa. **IEN-0935**

BEARINGS . . Miniature ball bearings; data on 250 types and sizes, application suggestions. Catalog 7, 16 pages. Landis & Gyr. Inc., 104 Fifth Ave., Rm. 1402, New York 11, N. Y. **IEN-0936**

BELTS . . Woven cotton, woven nylon, canvas belts, webbing; list prices by width and plies. Bulletin 1500, 12 pages. Globe Woven Belting Co., 1402 Clinton St., Buffalo 6, N. Y. **IEN-0937**

BORING . . Model 350-T horizontal boring, drilling, milling machine; specifications. Bulletin 35-T, 8 pages. Giddings & Lewis Machine Tool Co., 140-44 Doty St., Fond du Lac, Wis. **IEN-0938**

BRAZING . . Silver-alloy rings and preformed shapes; illustrated steps, production examples. "Low Temperature Brazing News 54", 4 pages. Handy & Harman, 80-84 Fulton, New York 7, N. Y. **IEN-0939**

CLEANING . . "Malleabrasive" shot and grit for blast cleaning; properties, test performance offer. Mailing folder 2215, 4 pages. Pangborn Corp., 230 Pangborn Blvd., Hagerstown, Md. **IEN-0940**

CONDUCTORS . . Bus duct for electric power; engineering data. Bulletin B-4272-A, letterhead request, 68 pages. Westinghouse Electric, 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-0941**

CONDUIT FITTINGS . . Range of designs, also cable terminals, connectors; catalog data. Bulletin 65, letterhead request, 64 pages. Thomas & Betts Co., 60-A Butler St., Elizabeth 1, N. J. **IEN-0942**

CONTRACT WORK . . In stampings, metal parts, special machines; detail list of equipment. "Facilities Bulletin", 18 pages. Arlington Corp., 670-82 Jenks Ave., St. Paul 6, Minn. **IEN-0943**

CONTRACT WORK . . Picture book of facilities and examples of work by maker of food-processing equipment. "Facilities Report", 58 pages. Girton Mfg. Co., 51 Industrial Blvd., Millville, Pa. **IEN-0944**

CONTROLS . . "Autocon Duotrol" for two or more pumps to a pressure tank; operating schematics. Bulletin 1510, 4 pages. Automatic Control Co., 1003-7 University Ave., St. Paul 4, Minn. **IEN-0945**

CONVEYING . . Roller conveyor layout suggestions, design details on rolls and side frames. Catalog 60, 16 pages. E. W. Buschman Co., 4447 Clifton Ave., Dept. 21, Cincinnati 32, Ohio **IEN-0946**

CONVEYING . . "Table Top" conveyor chain and sprockets; models and uses, engineering data. Bulletin 51-60, 20 pages. Chain Belt Co., 1675 W. Bruce St., Dept. PR, Milwaukee 4, Wis. **IEN-0947**

CONVEYING . . Spiral-woven wire belts; weaves, sizes, conveyor assemblies. Catalog 31, 40 pages. Korb-Pettit Wire Fabrics & Iron Works Inc., 1507-13 N. Mascher St., Philadelphia 22, Pa. **IEN-0948**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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YOU KNOW WHAT'S IN THIS ONE
CITY GAS

YOU CAN TELL AT A GLANCE WITH

QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order.

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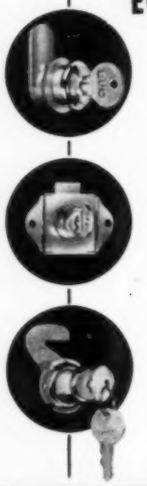

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Hundreds of styles and sizes in cabinet locks for wood or metal installations available for original equipment applications.

Illinois Lock engineers are always ready to cooperate with you in working out special locking problems.

For a complete service of your next lock problem—call Illinois.

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ILLINOIS LOCKS—Economy price cylinder locks—many key changes—construction avoids failure due to dirt or freezing.

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LEPEL *offers a New*

LOW COST *High Frequency* HEATING UNIT

AT A PRICE SO LOW THAT NO MACHINE SHOP, TOOL ROOM OR LABORATORY CAN AFFORD TO BE WITHOUT IT!

Unit illustrated brazing carbide tips to cutting tools. Shanks up to 1½" square can be satisfactorily brazed.

DOES ALL THESE JOBS *Faster, Better and Cheaper*
BRAZING, SOLDERING HARDENING, ANNEALING DRAWING AND MELTING

• SMALL and COMPACT
Conveniently operated on bench or table—no mounting necessary.

• ECONOMICAL OPERATION
No special power installation required. Operates on 110 volts, 60 or 50 cycle line at unity power factor.

• FULLY GUARANTEED
Guaranteed for continuous duty cycle and stated performance.

• LOW COST
Complete unit with line connection and load coil
$870.00 f.o.b. factory

WILL HEAT TO 1500° F.
⅛" steel rod 1" length in approx. 1 second
¼" " " " " 3 seconds
½" " " " " 15 seconds
1" " " " " 60 seconds
Will melt 4 ounces of brass or steel in 4 minutes.
Equally well suited for heating of non-ferrous metals.

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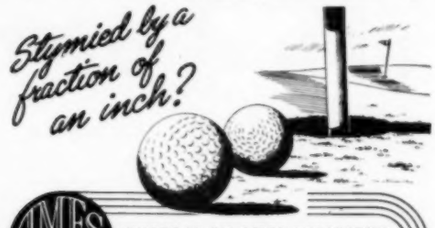
BREVITY—Identify by IEN - 8232 if you write the maker



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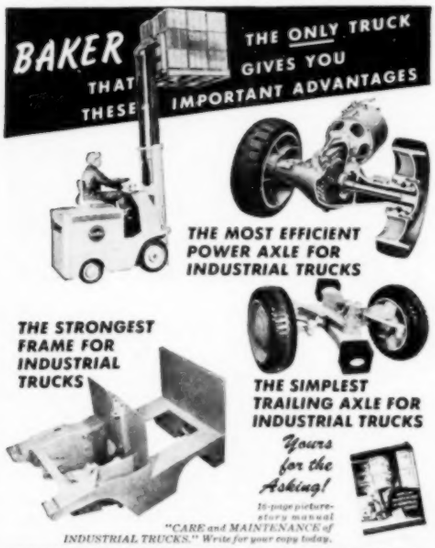
BAKER THE ONLY TRUCK THAT GIVES YOU THESE IMPORTANT ADVANTAGES



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16-page picture-story manual "CARE and MAINTENANCE of INDUSTRIAL TRUCKS." Write for your copy today.

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1226 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

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AJAX

KNOWS COUPLINGS

• Ajax rubber-bushed Flexible Couplings have been recognized as the standard for 30 years.

They provide positive resilient drive. Available with rubber or Neoprene bushings to suit conditions. Wide range of sizes in standard, bolt-on, brake drum and other types, with flanges made of ferrous and non-ferrous metals.

Write for Bulletin 48.

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, N. Y.

NEW LITERATURE—Continued

"Addresses so you can write direct"

CONVEYING . . Belt, chain, flight, roller, other types; picture examples, application notes. Bulletin W-1049, 8 pages. Maguire Machinery Co., 60 E. 42nd St., 45th Flr., New York 17, N. Y. **IEN-0949**

CONVEYING . . Light-duty overhead or beach conveyor; operation, picture application examples. "We Can Turn . . .", 4 pages. Teleflex Inc., 246-50 W. Wingohocking, Philadelphia 40, Pa. **IEN-0950**

COOLING . . "Wateo" water-spray roof cooling equipment; notes on function, equipment details. Bulletin 20, 4 pages. Water Cooling Corp., 71 Nassau St., Rm. 308, New York 38, N. Y. **IEN-0951**

CORROSION PROOFING . . Synthetic resin materials, applied at company's or user's plant; properties, uses. "Permolite", 6 pages. Permolite Inc., Ford Blvd. & N. 5th St., Hamilton, Ohio **IEN-0952**

COUNTING . . "Silver King" stroke and revolution counters; specifications, list prices. Bulletin SK-22, 4 pages. Production Instrument Co., 700-10 W. Jackson Blvd., Chicago 6, Ill. **IEN-0953**

CRANES . . Model-1520 pneumatic-tire mobile crane to 20 ton; specifications, range diagrams. Catalog 502, 6 pages. Unit Crane & Shovel Corp., 6409-13 W. Burnham, Milwaukee 14, Wis. **IEN-0954**

DOORS . . Wood-slat rolling door; captioned illustration of features, drawing and a clearance table. Bulletin 37-A, 4 pages. Kinnear Mfg. Co., 4002 Fields Ave., Columbus 16, Ohio **IEN-0955**

DRILLING . . Instruction booklet for 14-in. drill press. "How to Run a Drill Press", list price 25 cents, 32 pages. South Bend Lathe Works, 391 E. Madison St., South Bend 22, Ind. **IEN-0956**

DRILLING . . Machine to lay out, drill and ream holes, material to 36 in. in width; illustrated steps. Catalog DM, 8 pages. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y. **IEN-0957**

DRIVES . . Small gears, ratchets, racks, cams; illustrated examples, facilities. "Fractional H.P. Gearing", 6 pages. Gear Specialties Inc., 2633-37 W. Medill Ave., Chicago 47, Ill. **IEN-0958**

DRIVES . . "Cone-Drive" speed reducers; application stories by industry. Data Sheets 501 to 518 and 522, 20 sheets. Michigan Tool Co., 7169-73 E. McNichols, Detroit 12, Mich. **IEN-0959**

ELECTRONIC PRODUCTS . . Review of new equipment developments such as connectors, sockets, cords. "What's New," 4 pages. Alden Products Co., 115-19 N. Main St., Brockton 64, Mass. **IEN-0960**

EQUIPMENT . . New, used and rebuilt, from air compressors to woodworking; condensed data. "Blue Book", 48 pages. Interstate Machinery Co., 1402 W. Pershing Rd., Chicago 9, Ill. **IEN-0961**

FASTENINGS . . Blind rivets in a range of designs; selection data, installation tools, uses. Catalog C-51, 8 pages. Cherry Rivet Co., 229-33 Winston St., Los Angeles 13, Calif. **IEN-0962**

FASTENINGS . . Flush-mounting self-closing latch for metal, plastic, wood doors; models, suggested uses. Catalog, 56 pages. Hartwell Co., 9033-37 Venice Blvd., Los Angeles 34, Calif. **IEN-0963**

FASTENINGS . . "Speed Nuts" and clamps for aircraft; types, sizes, uses. Catalog 500, letterhead request, 122 pages. Tinnerman Products, Box 6688-A, Dept. 13, Cleveland 1, Ohio **IEN-0964**

FASTENINGS . . Retaining rings to use on shafts or in housings; types, dimensions, installation. Bulletin 8, 20 pages. Waldes Kohinoor Inc., 47-18 Austel Pl., Long Island City 1, N. Y. **IEN-0965**

FILTERING . . Oil filters and cartridges for engines, tractors, trucks; types, recommendation tables. Catalog DL-51, 53 pages. DeLuxe Products Corp., 1943 Lightner, LaPorte, Ind. **IEN-0966**

FLOORS . . Pocket booklet on floors and floor troubles, notes on company's materials. "Over the Rough Spots", 32 pages. Stonhard Co., 1034-8 Spring Garden St., Philadelphia 23, Pa. **IEN-0967**

FOUNDRY EQUIPMENT . . Series-500 jolt rock-over pattern-draw machine; data on 6 models, 200 to 1,500 lb. Bulletin 500, 4 pages. SPO Inc., 6152 Grand Division Ave., Cleveland 25, Ohio **IEN-0968**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8235 if you write the maker

A PAID NEWS ADVERTISEMENT BY CRANE PACKING CO.

COMPOUND . . Pipe Joint U. L. Approved. Prevents thread leakage and never dries out

This approved all-purpose sealing compound, called Plastic Lead Seal, is safe to use on a large number of "hard to seal" dangerous services. It will definitely prevent thread leakage — even under the most severe conditions of pressure, temperature, vibration, expansion, and contraction.

One of the most important features of this product is that it will never dry out or harden. Thus threaded joints can readily be taken apart, even after years of service.

PLS is insolvble in a wide variety of gases and liquids, including such services as steam, water, ammonia, freon, benzine, ethylene glycol, methyl chloride, propane, butane and other petroleum liquids and gases. It resists washing out by gases or liquids under pressures up to 6000 psi, and is recommended for temperatures to 500° F.

It is also widely used as a gasket compound because of its insolubility in so many services — and because it allows gaskets to be easily removed and re-used many times.

Packaged in 1, 5, 15 or 30 lb. cans, Plastic Lead Seal is easily applied and handy to use. The manufacturers will furnish a free sample jar for test purposes, on request.

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EACH AND EVERY UNIVERSAL DRILL BUSHING is tested for hardness which assures longer bushing life

149-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

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AUTOMATIC DISPATCH SYSTEMS

RUN Between Points Without Operators

SPEED Production

SAVE Time Money Floors Elevators

Press a button and up goes a load. When it reaches top position, the overhead carrier starts on its way to next room or building other side of street. Back and forth it travels automatically, carrying materials without operator accompanying. Many types of automatic Tramrail systems are cutting costs drastically and smoothening production flow.

AUTOMATIC DISPATCH SYSTEMS

Write for this free booklet.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4240 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 8238 if you write the maker

Over 85% of the torque wrenches used in industry are

Sturtevant TORQUE WRENCHES

Read by Sight, Sound or Feel

• Permanently Accurate
• Practically Indestructible
• Faster—Easier to use
• Automatic Release
• All Capacities

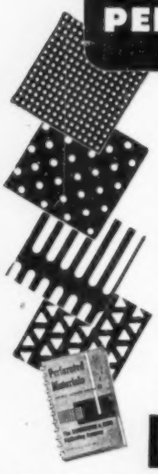
in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. Sturtevant Co
ADDISON QUALITY ILLINOIS

BREVITY—Identify by IEN - 8239 if you write the maker

Have You Considered
H & K
PERFORATIONS



. . . to answer the problems of eye appeal or ventilation or drainage or acoustical correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings in all currently available metals and nearly all plastics which are obtainable in the form of plates, sheets and coils.

We can perforate sheets to special sizes and form, weld and otherwise fabricate to your specification.

Tell us your needs and let us make recommendations and quote you prices.

The Harrington & King Perforating Co.

Our catalog No. 62 will be promptly sent upon request.

5637 Fillmore St., Chicago 44, Illinois
114 Liberty Street, New York 6, N. Y.

BREVITY—Identify by IEN - 8240 if you write the maker

LOCALITES
FOR BETTER LIGHT ON THE JOB
Directs Light Exactly Where Needed as Easily as Pointing Your Finger
Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3470-P-172

Overall length 48¼". Three instantly adjustable joints. Circular base for machine or wood screw mounting.

$7.16 EACH in pkg. of 6
Single Units $8.95 ea.

- Rugged Construction to stand strains and shocks.
- Instantly Adjustable with full swivel ball and socket joints.
- Infra-red Baked Enamel Finish — Exterior, Wrinkled Gray — Reflector Interior, high temperature White.
- Reflector accommodates 100 watt A-21 medium screw base lamp.
- Wired Complete with switch socket and 8 ft. oil resistant cord.

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
Localites are available through selected distributors everywhere.

LOCALITE Fostoria for Light ON the Job

BREVITY—Identify by IEN - 8241 if you write the maker

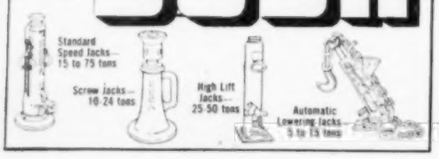
the BUDA JACK
with 1001 uses

10" OVERALL HEIGHT
FAST RISE
SAFE, EASY LIFTING
NO MAINTENANCE

Simple, compact design — rugged construction, low height, high lifting capacity — safe, easy operation makes these BUDA Ball Bearing Jacks ideal for your heavy lifting jobs. Require no maintenance. Many safety features. Write for Bulletin and complete details.

THE BUDA COMPANY, HARVEY, ILL.

BUDA



NEW LITERATURE—Continued

"Note the special '0' numbers"

GAGES . . Draft and pressure gages to indicate, record, control; application chart, measuring elements. Bulletin 51-667, 20 pages. Hays Corp., 740-44 E. 8th St., Michigan City, Ind. **IEN-0969**

GAGES . . Carbide gage blocks, .050 to 4 in.; tolerances, standard sets, attachments. Bulletin 532, 8 pages. Pratt & Whitney Div., 49 Charter Oak Blvd., West Hartford 1, Conn. **IEN-0970**

GRINDING . . Portable pneumatic grinders, drills, screwdrivers, chippers; models, accessories, uses. Bulletin 38, 44 pages. Rotor Tool Co., 17323-27 Euclid Ave., Cleveland 12, Ohio **IEN-0971**

HEAT TREATING . . Furnaces for ferrous and non-ferrous metal parts; condensed picture review. Bulletin SC-152, 4 pages. Surface Combustion Corp., 2373-77 Door St., Toledo 1, Ohio **IEN-0972**

HEATING . . "Platecoil" elements for heating or cooling as in tanks; engineering and selection data. Bulletin 514, 36 pages. Kold-Hold Mfg. Co., 701-5 E. Hazel St., Lansing 4, Mich. **IEN-0973**

HOSE . . Braid-reinforced synthetic-rubber hose, detachable fittings; types, assembly, uses. "Industrial Catalog", 44 pages. Aeroquip Corp., 303 S. East Ave., Jackson, Mich. **IEN-0974**

INCINERATORS . . Equipment to burn process fumes by catalytic means; principle, uses. Bulletin B, 8 pages. Catalytic Combustion Corp., 4542-46 Grand River Ave., Detroit 8, Mich. **IEN-0975**

INDEXING . . Optical dividing head for machine use, also an indexing table; descriptions, uses. Catalog 16, 12 pages. F. T. Griswold Mfg. Co., 303-7 W. Lancaster Ave., Wayne, Pa. **IEN-0976**

INSULATING . . "Scotch" pressure-sensitive tapes for electrical work; properties and uses. "Electrical Tapes", 8 pages. Minnesota Mining & Mfg. Co., 902 Fauquier, St. Paul 6, Minn. **IEN-0977**

INSULATING . . Calcium silicate thermal insulation and building materials; descriptive details. "Kaylo", 24 pages. Owens-Illinois Glass Co., 538 Ohio Bank Bldg., Toledo 1, Ohio **IEN-0978**

ISOLATING . . "Barrymount" vibration-isolating units for machine mounting; punch-press selection table. Bulletin 607, 4 pages. Barry Corp., 700-P Pleasant St., Watertown 72, Mass. **IEN-0979**

ISOLATING . . "Snubbers" to minimize surges in compressed-air and gas lines; condensed information. Bulletin 92, 4 pages. Burgess-Manning Co., 747-51 Park Ave., Libertyville, Ill. **IEN-0980**

LADDERS . . Caster-mounted steel stepladders with one to eight steps; models, work heights, typical uses. "Safety Step", 6 pages. Ballymore Co., 137-41 Pennsylvania Ave., Wayne, Pa. **IEN-0981**

LIGHTING . . "Anchorlite" self-retracting suspended fixture; description, picture examples of use. Bulletin 601, 4 pages. Pyle-National Co., 1348 N. Kostner Ave., Chicago 51, Ill. **IEN-0982**

LIGHTING . . Fluorescent, mercury-vapor, incandescent units; review. Bulletin B-4727, 16 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-0983**

LOADING . . Wheel or crawler-mounted bucket loader machine; data on three 3-cym. models. Bulletin H-75-77, 8 pages. George Haiss Mfg. Co., Canal Pl. & 143rd St., New York 51, N. Y. **IEN-0984**

LUBRICATING . . Graphited and molybdenum-disulfide lubricants for oven chains; types, properties, lubricators. Bulletin 85, 4 pages. Bel-Ray Co., 49 Green Village Road, Madison, N. J. **IEN-0985**

LUBRICATING . . Automatic lubricating equipment for machinery; five picture examples. "Centralized Lubrication 1951," 8 pages Farval Corp., 3240-53 E. 80th St., Cleveland 4, Ohio **IEN-0986**

LUBRICATING . . Consultation service on application of the company's lubricants for industry. Bulletin AD-5620, 24 pages. Gulf Oil Corp., 352 Gulf Bldg., Pittsburgh 30, Pa. **IEN-0987**

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BREVITY—Identify by IEN - 8242 if you write the maker

THE ONLY AIR CYLINDER WITH ALL CONTROLS Built-In

THIS revolutionary air cylinder is a complete power unit in itself. Four-way directional valve, with an operating lever adjustable to work from any angle in any plane, and separate speed controls for advance and retract strokes, are integral with the cylinder itself. This compact "controlled-air-power" unit requires only one air connection which can be flexible hose. Available in 1¼", 1¾", 2½", 3⅝" and 4½" bores. Any stroke length.

Known as the Bellows Air Motor, this modern version of air cylinder power makes air safer, easier and simpler to use. Helps in a hundred ways to get more production at lower cost.

• Write today for your free copy of the new 30-page bulletin "Faster, Safer, Better Production". Address The Bellows Co., Dept. IEN-851, 222 W. Market St., Akron 9, Ohio.

The Bellows Co.
Akron 9, Ohio.

BREVITY—Identify by IEN - 8243 if you write the maker

CANNON PLUGS

. . . standard components on fine electrical and electronic equipment. After 33 years of building electrical specialties, Cannon Electric continues to pioneer new and better types of connectors, maintaining its reputation for progress and development. In the 13 major type series of connectors will be found most of the requirements for quick disconnection of electrical circuits. For a survey of the general line, write for Condensed Catalog.

UA SERIES
(Ultimate Audio Connectors)
THREE 15-AMP. CONTACTS

Latest development in the connector phase of audio engineering is the new series of microphone and sound circuit connectors designed and built by Cannon Electric to RMA Committee requirements and standards. Briefly, following features should be noted: (1) *Safety latchlock* (2) *Shockproof* (3) *FULL-Floating Socket Contacts* (4) *Splashproof* (5) *Steel plug shells* (6) *Rubber sleeve for cable relief* (7) *Grounding Contact* (8) *Gold plated 15-amp. contacts for low loss.*

Address Cannon Electric Company, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif. Factories in Los Angeles, New Haven and Toronto. Export: Frazar and Hansen, San Francisco. Representatives in principal cities.

SINCE 1915

CANNON ELECTRIC

REG. U. S. PAT. OFF.

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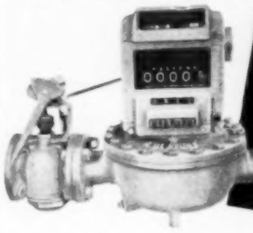

NEPTUNE AUTO-STOP METERS

AUTOMATIC METERING *pays off!*

Wherever liquids feed into processes, these new batching meters save ingredients, hit formulas "on the nose," eliminate unsanitary conditions, and provide accurate cost figures. Save time, too! Simply push buttons to set the meter, open the valve, and the Auto-Stop cuts off at exactly the right quantity. No more gauge sticks, batch tanks or buckets. Auto-Stop sizes 1", 1½" and 2" for water, syrups, oils, and other liquids. Ask for facts—just telephone Neptune office nearest you.

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Atlanta • Boston • Chicago • Dallas • Denver • No. Kansas City
Louisville • Los Angeles • Philadelphia • Portland • San Francisco

BREVITY—Identify by IEN - 8245 if you write the maker

RUGGED TOUGHNESS...
Velvet Smoothness

FOR HIGHER SPEEDS FASTER PRODUCTION

Sturdy, longer life built into every length of Atlas Roller Chain assures rugged toughness on every installation. The Atlas Nicuff-Process used for case hardening bushings and pins is one big reason for the stamina of Atlas "Super-Life" Chain. Nicuffing provides an outer surface strongly bonded to the core of steel which provides greater strength and wear resistance.

Atlas Chain drives operate with a velvety smoothness made possible by precision made bearings rolling at every point of contact. These bearings—pins, bushings and rollers—are of specially selected steels finished by Atlas's Exclusive "Microfinish" process.

The result is a super-life chain that minimizes wear and repair. Greater efficiency . . . greater economy on every drive. To speed up production and cut maintenance install Atlas positive-power drives. Write for new handbook and catalog on chain drives . . . no charge, no obligation.

ATLAS CHAIN & MANUFACTURING CO.
Philadelphia 24, Penna.

ATLAS ROLLER CHAIN

BREVITY—Identify by IEN - 8246 if you write the maker

RAILS AND TRACK ACCESSORIES

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog IE-6

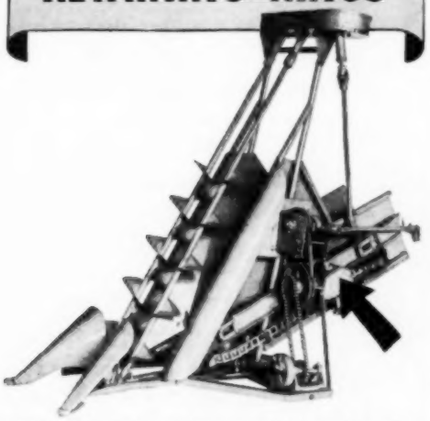
STEEL SHEET PILING • PIPE • WIRE ROPE

L.B. FOSTER CO.

PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.

BREVITY—Identify by IEN - 8247 if you write the maker

Cut Your Costs by Redesigning for RETAINING RINGS



Gehl Harvesters and Hammer Mills are famous for their efficiency, rugged construction and continuous heavy duty service. By skillful designing for retaining rings Gehl Bros. Mfg. Co. of West Bend, Wisconsin saves metal, money and time. Perhaps you can too.

Hundreds of machines and products can and should be redesigned to take advantage of these inexpensive, yet highly efficient, artificial shoulders. Retaining rings are certain to save man hours as well as material.

To offset the rising costs of so many things here is one sure way to increase your margin of profit.

Don't cut down large shafts to make your shoulders—it's needless waste. Groove all shafts and housings and use these high grade steel rings.

Examine your machines and products today, and send for a descriptive folder of our many types of retaining rings.

THE NATIONAL LOCK WASHER CO.

NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.

BREVITY—Identify by IEN - 8249 if you write the maker

ROCK DRILLING . . Carbide tipped drill with spiral leads for use in masonry

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.

Cyclo-Core is a new self-centering core-type drill for rotary drive in concrete, glazed tile, hard masonry, sizes are ¾ to 2 in. in diameter. The drill is characterized by its removable carbide-tipped center with which a hole is spotted and started. Then the center piece is removed and action continues as a core drill.

Dust is expelled by the machined spiral threads running the length of the body. A port opening back of the cutting edge provides for cleaning out the core. The smallest ¾-in. drill has a ½-in. shank, measures 8 in. in overall length and lists at $9.80. The removable center for this drill adds $3.50. The largest 2-in. size has a ¾-in. shank, measures 12-in. in overall length and lists at about $42. The removable center adds about $10.50 to this list price.

BREVITY—Identify by IEN - 8250 if you write the maker

GRINDING . . Abrasive wheels for use in carbide tool sharpening

Source: CHICAGO WHEEL & MFG. CO.
1103 W. Monroe St., Chicago 7, Ill.

Performs like diamond wheels

Type XL is a new line of wheels employing a bond developed by the company to produce a vitrified silicon-carbide wheel particularly suited for sharpening carbide tools. The wheels are recommended for offhand and for precision grinding of milling cutters, broaches, reamers, counterbores, tool bits. Types are available in cup, plain and surfacing design in a range of sizes from 2⅛ by 1¾ in. to 7 by 1 inch. Samples are available to companies contemplating quantity use.

BREVITY—Identify by IEN - 8251 if you write the maker

SCREW DRIVING . . Pneumatic tool rates to ¼ in., non-reversing action

Source: CLECO DIVISION
5129 Clinton Drive, Houston 20, Texas

Slip-impact action is provided by a three-finger adjustable clutch in this new No. 9SPF-10B tool. It employs a finger throttle control for speeds to 1,000 rpm. It measures 8¾ in. in overall length and weighs 2¾ pounds. Side clearance is $\frac{13}{16}$ in. for access into narrow openings. The tool can be converted from screw driving to nut running.

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BREVITY—Identify by IEN - 8252 if you write the maker

MET-L-WOOD

METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

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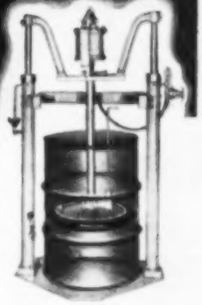
6755 West 65th Street • Chicago 38, Illinois

"Met-L-Wood . . . opening new horizons to structural designers"

BREVITY—Identify by IEN - 8253 if you write the maker

Completely... empties...cleans a 55 gallon drum!

VERSATAL
power operated
FOLLOWER
PLATE PUMP



- Pumps the heaviest materials, quickly, easily.
- Stops contamination, doesn't allow air to reach the material.
- Prevents material from drying out or "skinning over."
- Saves Important money on barrel cleaning.
- 5836 lbs. atmospheric pressure on the material, assures safe, positive prime.

Free—write now for literature giving full data. Address Alemite, Dept. 8-81, 1830 Diversey Parkway, Chicago 14, Illinois.

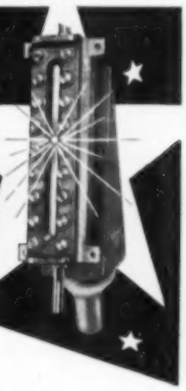
Another product of Stewart-Warner

ALEMITE Versatal SPRAY PUMP EQUIPMENT

BREVITY—Identify by IEN - 8254 if you write the maker

BOILER WATER LEVEL

Shines like a Star



With NEW YARWAY ILLUMINATOR

Get *positive* water gage readings. New Yarway illuminator spots meniscus at any point in its range. Superior penetration of blue-white light cuts through foreign deposits on gage glasses, extraneous light and dust particles. Use on new or already-installed Yarway Flat Glass Gages. Full details on request.

Yarnall-Waring Co., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY *Branch Offices in Principal Cities*

BREVITY—Identify by IEN - 8255 if you write the maker

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If your roof isn't giving you the same complete service in its twentieth year as it did in its first, it is time for a check-up. Equipment and merchandise need the lasting protection that a Ruberoid Bonded Roof can give. A leader in the built-up roofing field for almost 60 years, Ruberoid can supply materials and specifications to meet any roofing conditions.

Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced asphalt—in specifications to meet every need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of uniform quality, centralized responsibility, more economical operation with Ruberoid Built-Up Roofings. Write for Ruberoid's Built-Up Roofing Specification Book.

The RUBEROID Co.

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MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

BREVITY—Identify by IEN - 8256 if you write the maker

As a Man Bends, So Bends the LAWLOR

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before — around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arc and shove the Lawlor under anything where there is at least a 9½" opening and as far back as 4½ feet. Three models — a size to suit every need.

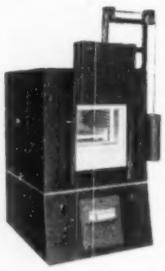
Write for literature on adjustable handle models and other Lawlor units.

There's a complete line of Lawlor Floor Maintenance Equipment — scrubbers, wax polishers, mopping tanks, mop wringers.

S. C. LAWLOR CO.
Quality Floor Equipment for 50 years
120 N. ABERDEEN ST., CHICAGO 7, ILL.

BREVITY—Identify by IEN - 8257 if you write the maker

Designed for TOOL ROOM EFFICIENCY



HUPPERT Model 11 FURNACE

Years of low-cost operation on heaviest schedules in tool and die shops, and laboratories have dictated these features for your economy. Huppert Automatic Temperature Control for accuracy to 2000°F.—Huppert Multi-Insulation, Heavy-duty Kanthal elements, and fully enclosed contacts. Counterweighted, tight-sealing door. I.D. 8" x 6" x 12". 220 V. AC, 4½ KW max. load.

Model 11ACB $380.00 Complete
Model 11 $240.00 (without Temp. Control)

OTHER CAPACITIES

	I.D.	MAX. TEMP. FAHR.	KW	PRICE WITHOUT TEMP. CONTROL
Model 12	8" x 8" x 12"	2000°	6	$320.00
Model 12A	8" x 8" x 18"	2000°	9	$400.00
				PRICE WITH TEMP. CONTROL
Model 12ACB	(Same specifications as Model 12)			$430.00
Model 12A-ACB	(Same specifications as Model 12A)			$560.00

All models can be supplied for 2300°F. operation for small additional cost.

Write for Details

K. H. HUPPERT COMPANY
6836 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

BREVITY—Identify by IEN - 8258 if you write the maker

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- Vacuum Power
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- Ignitrons
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- Phototubes
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FREE Interchangeability Directory
Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for FREE RCA Guide No. 37-046.

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ALLIED maintains in stock *for quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes *of all types*. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money, phone, wire or write to ALLIED for *quick* shipment. Fill *all* your needs from the *complete, dependable* electronic supply source.

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NEW LITERATURE—Continued

"Subjects from Adhesives to Welding"

LUBRICATING . . Visible automatic oilers for machinery models, application, picture uses. Broadside, "Series 600," 8 pages. Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis. **IEN-0988**

METAL TREATING . . "Lithoform" phosphate treatment for zinc to form a paint bond; details. Data Sheet 7-2-5, 4 pages. American Chemical Paint Co., P. O. Box 301-A, Ambler, Pa. **IEN-0989**

METAL TREATING . . Contract service to clean and phosphate-coat rolled steel plate, shapes; details. Bulletin 9, 12 pages. Chicago Bridge & Iron, 330-34 S. Michigan, Chicago 4, Ill. **IEN-0990**

MARKING . . "Base-Lock" and solid rubber type for product marking; fonts, pads, presses, brushes. Catalog D, 16 pages. William A. Force & Co., 214-18 Nichols Ave., Brooklyn 8, N. Y. **IEN-0991**

MARKING . . Hand stamps, steel type, type holders, roll dies, grouped by type of work. Catalog NM-51, 8 pages. New Method Steel Stamps Inc., 141-45 Jos. Campau, Detroit 7, Mich. **IEN-0992**

MILLING . . Optical follower attachment for knee-type milling machines; typical uses. "Optical Follower," 4 pages. Boeckeler Instrument Co., 29-33 E. Rillito St., Tucson, Ariz. **IEN-0993**

MILLING . . Machines for milling, broaching, grinding, lapping, flame hardening; review. Bulletin M-1712, 48 pages. Cincinnati Milling Machines, Marburg & Kline, Cincinnati 9, Ohio **IEN-0994**

MOTORS . . Single-phase, polyphase, dc. motors; picture summary, condensed information. Bulletin G-51-1, 4 pages. Wagner Electric Corp., 6488 Plymouth Ave., St. Louis 4, Mo. **IEN-0995**

OIL TREATING . . Application examples of oil filtering, purifying equipment for hydraulic, quenching oils. Bulletins, 4 pages each. Honan-Crane Corp., 510 Indianapolis Ave., Lebanon, Ind. **IEN-0996**

PACKAGING . . Automatic machines to form cartons, wrap products, bundle cartons; descriptions. "A Small Saving . . ", 4 pages. Package Machinery Co., 132 Birnie Ave., Springfield, Mass. **IEN-0997**

PAINTING . . Review of spray finishing equipment available for defense production, notes on service. Bulletin DO-10, 6 pages. Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. **IEN-0998**

PAINTING . . Rubber-base machine enamels, damp-wall enamels, concrete floor finishes; properties, instructions. Bulletin, 8 pages. Casey & Case Coating Co., Box 151-A, Maywood, Calif. **IEN-0999**

PAINTING . . Nickel-formed spray masks and stencils; description, design notes on five types. "Spray Masks," 6 pages. Thierica Studio, 414-18 Henry Ave. S. E., Grand Rapids 6, Mich. **IEN-01000**

PIPE . . Light-wall stainless-steel pipe, ⅛ to 4 in.; notes on properties, data table. "Schedule 50 Pipe," 6 sheets. Carpenter Steel Co., 131-35 Springfield Road, Union, N. J. **IEN-01001**

PIPE FITTINGS . . Style-38 couplings, ⅝ to 72 in.; operation, installation, dimensions, other types. Catalog 513, 36 pages. Dresser Mfg. Div., 102 Fisher Ave., Bradford, Pa. **IEN-01002**

PIPE FITTINGS . . "Wedge-Lock" coupling for light-wall pipe, 8 to 30 in.; installation steps, dimensions. Bulletin 513, 4 pages. Naylor Pipe Co., 1228-32 E. 92nd St., Chicago 19, Ill. **IEN-01003**

PLASTIC FABRICATING . . Machines to form, fold, shape, bend, assemble sheet plastic; product suggestions. Folder 5104, 6 pages. Taber Instr. Corp., 107 Goundry St., Tonawanda, N. Y. **IEN-01004**

PLASTIC MOLDING . . Preforming presses; models, ratings, notes on preform procedure. Catalog 509, 20 pages. F. J. Stokes Machine Co., 5056 Tabor Rd., Philadelphia 20, Pa. **IEN-01005**

PLASTICS . . Trifluorochloroethylene temperature-resistant thermoplastic film; description, properties. "Tritherne," 16 pages. Visking Corp., P. O. Box 1410-A, Terre Haute, Ind. **IEN-01006**

PLATING . . Vacuum-deposition equipment; two-page specification chart on 8 models. "Vacuum Coating," 4 pages. Distillation Products Industries, 761 Ridge Rd., Rochester 3, N. Y. **IEN-01007**

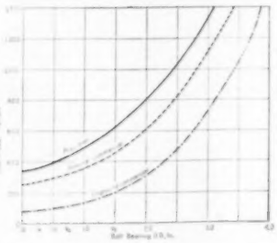
PRESS TOOLS . . "Elasticone" spiral telescoping cover for leader pins and bushings; size table. Data Sheet, 2 pages. Central Safety Equip., 2202 E. Huntingdon, Philadelphia 25, Pa. **IEN-01008**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8259 if you write the maker

A PAID NEWS ADVERTISEMENT BY THE SCHATZ MANUFACTURING CO.

Schatz "Commercial" Ball Bearings can reduce anti-friction bearing costs 35 to 85%



Relative costs of precision and "Commercial" Ball Bearings: In very small sizes, the cost of precision bearings **increases** as the bore decreases, due to the difficulty in maintaining close tolerances. The cost of "Commercials" **decreases** in almost direct proportion to the size.

Expensive precision bearings with their extremely close tolerances are often unnecessary in certain applications.

Where the operating conditions of these applications are within the load and speed limits of Schatz "Commercial" Ball Bearings, you can obtain the required anti-friction bearing performance—at 2/3 to 1/6 the cost of precision bearings.

The savings possible in such instances are illustrated in the above graph.

Write for your copy of "Construction and Characteristics of Low-Cost Ball Bearings." It tells how to select "Commercial" Ball Bearings for various speed and load requirements, gives the classifications of standard types for radial and thrust loads, and examples of the modifications that can be made for special design, assembly or operating conditions. Ask for Catalog No. 11, too. It gives complete data for the whole "Commercial" line.

THE SCHATZ MANUFACTURING COMPANY
6750 Fairview Avenue, Poughkeepsie, N. Y.

BREVITY—Identify by IEN - 8260 if you write the maker

Leach RELAYS

Precision is the Keynote—in Production and Performance

The word precision perfectly characterizes every relay manufactured by LEACH, and this precision is most apparent in their performance. Whatever the purpose, LEACH can provide relays of advanced design for flexibility, economy and unexcelled performance. Highest standards of engineering, materials and workmanship. For better controls through better relays—contact LEACH.

LEACH RELAY CO.
5915 AVALON BOULEVARD, LOS ANGELES 3, CALIF.
Representatives in Principal Cities of U. S. and Canada

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LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 a $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. "EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,
Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and our NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-81
2503-05 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

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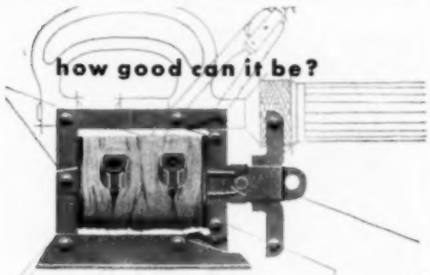

In the design, engineering and manufacture of electrical specialties, the guiding principle at Soreng is *How good can it be?* "Good enough" is never good enough. Our designers, research and development engineers, our production specialists—all are constantly working to make Soreng products better than ever. This is your assurance that every Soreng component—solenoid, switch, terminal or other electrical specialty—is the finest of its kind today . . . and will continue to be tomorrow.

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Plants: Schiller Park, Ill. • Fremont, Ohio

BREVITY—Identify by IEN - 8264 if you write the maker

UPS PRODUCTION 25% BETWEEN DIE GRINDS

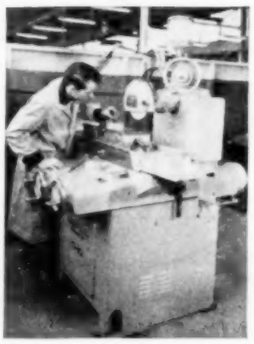
DoALL "COOL-GRINDING"

(U.S. PATENT NO. 2470380)

GIVES IMPROVED FINISH ON HIGH CARBON HIGH CHROME NN STEEL

"COOL-GRINDING" WILL PREVENT BURNED OR SCORED FINISH, LENGTHENS THE LIFE OF YOUR TOOLS

"Cool-Grinding" takes liquid in at the hub of the wheel, and through centrifugal force passes it through the pores of the wheel and out as a fine mist *at the point of contact between the wheel and the work.*



ONWARD Manufacturing Company, Ltd., Kitchener, Ont., knows the benefits of DoALL *"Cool-Grinding."* They say, *"Since using this Grinder with 'Cool-Grinding' we have obtained a 25% increase in number of pieces per die grind over former methods of grinding."*

WHY? Because DoALL "Cool-Grinding," with coolant flowing *through* the wheel, prevents excessive heat that scores, draws the temper or checks the metal finish. The finish is smoother, too. The die does more work before it needs grinding. You save time and money and material. Ask to have a Free DEMONSTRATION of DoALL "Cool-Grinding" at your own plant. Call your local DoALL Sales-Service Store or write:

THE DoALL COMPANY
254 N. Laurel Ave.
Des Plaines, Ill.

SEND FOR CATALOG *Today*

DoALL

GR-2-R

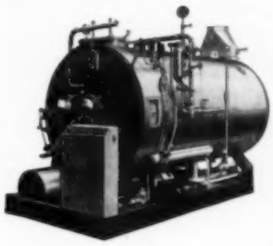
—see how "Cool-Grinding" works, why it is better, how it will benefit you —see the different models of DoALL Precision Grinders for toolroom or production work.

Machine Tools . . . Gaging Equipment . . . Tool Steel Band Tools . . . Metal Working Supplies

BREVITY—Identify by IEN - 8266 if you write the maker

BOILER . . Self-contained assembly fire tube design, oil and gas fired

Source: TITUSVILLE IRON WORKS
51 Industrial Ave., Titusville, Pa.



Ticosteam Generator trade names a new line of self-contained boilers for automatic operation on oil or gas or a combination of the two. Ten sizes in the line rate 20 to 310 bhp. based on 34.5 lb. of steam per bhp. from and at 212 deg. F. This is the equivalent of 690 to 10,350 lb. of steam per hour. Products of combustion make three passes under forced draft. Combustion efficiency is 80 per cent.

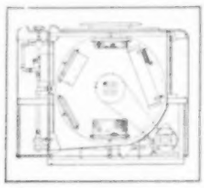
The unit is skid mounted ready for operation, without any special foundation, immediately after connection to fuel, water, steam and electric power at 220-volts 60-cycle three-phase ac. Construction is in accordance with the ASME code. The boiler is Hartford Insurance Inspected. Operating pressure can be specified between 50 and 200 pounds.

Overall length is approximately 10 to 22 ft. with overall width at 5 to 9 ft. and height at 5½ to 10 feet. Controls are operated from a single pushbutton station mounted on the front of a panel cabinet. Safety equipment includes Fireye combustion control with manual reset, dual low-water cut-off with an alarm, high-low interlocking safety switches for the pilot and main gas line, motorized main gas valve, high-pressure gas regulator, gas-electric ignition and two observation windows, one on the burner head and one on the rear tube cover at the center of the furnace. Bulletin B-3100, 6 pages, presents illustrated detail information.

BREVITY—Identify by IEN - 8267 if you write the maker

CLEANING . . Washing machine takes laboratory glassware in baskets

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



Soiled glassware is loaded into cover-equipped metal baskets and the baskets are secured to cross-rods in a drum in this new washing machine for rotation by a 1/6-hp. motor at about 9 rpm. The baskets are alternately carried down into a heated washing solution of water and a suitable detergent and up above the water level. A cycle requiring a little under an hour cleans the glassware ready if necessary for sterilization. Baskets are available for all types of laboratory glassware.

The machine is built of stainless steel with copper internal piping. The housing is insulated with a 1-in. layer of glass wool. Controls are provided to permit spraying the work with small jets of water. Steam can be delivered also through the jets. A jog button is included in the control to advance the drum step by step for loading and unloading. Two models are available for steam or electric heating. List price is $1,450 for the new machine without accessories.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8268 if you write the maker

NP PRE-ENGINEERED *Pneumatic* **DOOR OPERATORS**

NATIONAL PNEUMATIC CO., INC.
Boston • Graybar Bldg., New York • Chicago

BREVITY—Identify by IEN - 8269 if you write the maker

New DUMORE AUTOMATIC DRILL HEAD

Cuts costs 6 ways on small-hole drilling

Check these exclusive features
- More Holes per Minute
- Less Drill Breakage
- Less Scrap Loss
- Fast Set-up
- Self-Contained Air
- Lower Labor Costs

Here is the most revolutionary production tool ever offered to the small-drill user — a compact, completely automatic drill head with self-contained air, controlled feed and speed, and extreme flexibility of set-up.

Because it operates at, but never over, optimum capacity of the drill, it gives you maximum production with minimum drill breakage — drill savings alone pay for the tool in short order on the majority of installations.

See the New Automatic Drill Head at your Dumore Distributor or write today for free 16-pg. bulletin.

The DUMORE Company
1300 17th St., RACINE, WISCONSIN
Export address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 8270 if you write the maker

UNIVERSAL

EXPANDED METAL FLOOR TRUCKS

- Greater Economy
- Greater Utility

MODEL 4-A
Length 60", width 30", height 30".

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters —swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 8271 if you write the maker

Cuts everything!
- CARBON TOOL STEEL
- PLASTICS • WOOD
- ASBESTOS • PAPER

Delta 14" BAND SAW

IDEAL FOR PLANT MAINTENANCE

- **Five cutting speeds**— four for metal, one for wood
- **Easy change from wood to metal** simply flip a lever
- **Gear drive for metal cutting** engineered for long and trouble-free service
- **Metal speeds** 125, 175, 250, 340 F.P.M.
- **Double trunnion table mounting**— massive table, 14 x 14

Write for catalog, or see your Delta dealer listed in Classified Phone Directory under "Tools"

There's a Delta Power Tool for Your Job- Wood or Metal Working
53 MACHINES — 246 MODELS — MORE THAN 1300 ACCESSORIES

DELTA MILWAUKEE — DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
615H E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 8272 if you write the maker

ELECTRIC and ELECTRIC-EYE COUNTING

Tremendous aid to improved efficiency

WIZARD Electric Counters count anything that will operate a switch, photo-electric unit, or other circuit-breaking device. You can locate them at any distance from the actual source of count. Operations thruout the plant can be counted in Production Office.

Models for every purpose. Just tell us what you want to do.

JUST OFF THE PRESS—16-page illustrated bulletin. Describes Modern Methods of Count Controlling Production Packaging, Deliveries, Batch Counting; Remote Production Counting. Send for your copy.

Production Instrument Company
700-10 W. JACKSON BLVD., CHICAGO 6, ILL.
Representatives in Principal Cities

BREVITY—Identify by IEN - 8273 if you write the maker

Buck AJUST-TRU CHUCKS

.0005 PRECISION

In 1 MINUTE!

Fastest chuck in the world!

Saves fooling around adjusting the grip of four jaws . . . cellophane shims . . . "springing". Keeps the same .0005 precision chucking duplicate parts *with scroll chuck speed.*

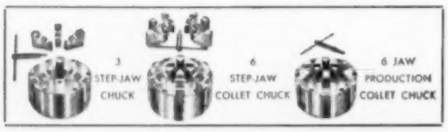
6" 6-jaw Buck *handles the work of 93 collets* — yet it's priced in line with ordinary chucks!

Those are just some of the features of this new kind of chuck. They are unbelievable—but TRUE! Send for literature—see for yourself!

NOTHING LIKE IT!

This is the first and only successful dual control chuck. Its operation is easy to understand and use. One pinion (see center of chuck body above) moves jaws in or out to grip work—just like any scroll chuck. 4 opposed screws (only two can be seen in photo) work on the chuck adapter to bring work to dead center. Even dubs have centered work within .0005 in 3 minutes! Once set dead true, hundreds of duplicate parts can be machined without changing adjustment—by simply using the scroll control.

BUCK TOOL COMPANY
816 Schippers Lane Kalamazoo, Mich.



BREVITY—Identify by IEN - 8274 if you write the maker

tempscribe

RANGES AVAILABLE

Temperature Range	One Rotation of Chart
30 to +130 F	7 Days
30 to +120 F	24 Hours
20 to 40 F	24 Hours
10 to 50 F	7 Days
10 to 50 F	24 Hours
40 to 60 F	24 Hours
40 to 100 F	7 Days
60 to 100 F	24 Hours
60 to 90 F	24 Hours
60 to 90 F	8 Hours
70 to 130 F	24 Hours
70 to 130 F	8 Hours
100 to 160 F	4 Hours
25 to +10 C	24 Hours
5 to 40 C	24 Hours

RECORDING THERMOMETER

The TEMPSCRIBE self-registering Recording Thermometer meets a long-felt need for a moderately priced recorder for general purpose applications where a graphic record of temperature in surrounding air is required. The record—written on an easy-to-read chart, 4" in diameter, with graduations spaced uniformly over full range—is indispensable wherever knowledge is desired if temperature goes above or below any given point. TEMPSCRIBE is the only recorder made with pen and actuating element in door, which, when opened, permits a clear view of the complete chart, and easy chart replacement without danger of damaging pen arm or accidentally marking chart.

MOTOR OPERATION RECORDER ALSO AVAILABLE

for recording any cycle carried out by interrupting an electric current, such as starting and stopping motor, fan, heater, sign, etc.

Write for Bulletin 715

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 Bennett Street · Pittsburgh 8, Pa.

NEW LITERATURE—Continued

"Alphabetical to assist your selection"

PRINTING . . Machine for a packaging line to print shipping cases as they are packed; specifications. "Markoprinter," 4 pages. Adolph Gottscho Inc., 6D Terminal Road, Hillside 5, N. J. **IEN-01009**

PROCESSING . . "AirSet" roller mill for grain, feed, chemicals; captioned sectional views. Bulletin 06-B-7679, 6 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. **IEN-01010**

PROTECTING . . Cleaning liquid and tissues in dispenser cabinet for goggles and lenses; description. Mailing folder, "K-Lens-M," 4 pages. Wilkins Co., 218-22 Groton Ave., Cortland 7, N. Y. **IEN-01011**

PULLING . . Portable hand-operated hydraulic pulling tool; basic models, applications. Bulletin, "Power Twin," 8 pages. Owatonna Tool Co., 371 N. Cedar St., Owatonna, Minn. **IEN-01012**

PUMPS . . Fuel and hydraulic pumps for aircraft service; condensed data, performance curves. Bulletin 300, 4 pages. Eastern Industries Inc., 294-98 Elm St., New Haven 6, Conn. **IEN-01013**

PYROMETERS . . Portable instruments for temperatures to 3,000 deg. F.; models, thermocouples. Bulletin PPY-1, 2 pages. Wheelco Instruments Co., 845-9 W. Harrison St., Chicago 7, Ill. **IEN-01014**

RECORD KEEPING . . "Kardex" record cabinets and equipment; features, models, capacities. Bulletin KD-614, 24 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-01015**

RELAYS . . With sensitivity to .0001 watt; classification chart, models, ratings, adjustments. Catalog 51-3, 16 pages. Sigma Instruments Inc., 168-72 Pearl St., South Braintree 85, Mass. **IEN-01016**

RESISTORS . . Wire-wound units in fixed, adjustable, ferrule designs, 2 to 225 watts; specification tables. Bulletin 176, 4 pages. Wirt Co., 5223-25 Greene St., Philadelphia 44, Pa. **IEN-01017**

RHEOSTATS . . Type-W 2-watt wire-wound rheostat; construction, dimensions, ratings. Bulletin A-2, 4 pages. International Resistance Co., 407 N. Broad St., Philadelphia 8, Pa. **IEN-01018**

RUBBER . . "Rubatex" cellular rubber; two-page properties chart on 18 types, illustrated uses. Catalog RBS-4-51, 12 pages. Great American Industries Inc., 49 Industrial St., Bedford, Va. **IEN-01019**

SCREW DRIVING . . Hopper-feed machine to drive No. 2 to ¼-in. screws; operating details, specifications. Bulletin AS-4R, 12 pages. Shakeproof Inc., 2501 N. Keeler Ave., Chicago 39, Ill. **IEN-01020**

SCREW DRIVING . . Hand tools, nut drivers, with plastic handles; data on individual units and sets. Catalog SD-551, 36 pages. Vaco Products Co., 315-19 E. Ontario St., Chicago 11, Ill. **IEN-01021**

SEALING . . O-rings of silicone rubber; sizes, properties, gland groove design, installation. Catalog 502-B, 8 pages. Arrowhead Rubber Co., 11632-36 S. Patton Rd., Downey, Calif. **IEN-01022**

SEALING . . Packings and gaskets; recommendation charts, descriptions and weights on 95 types. Catalog P-100-C, 32 pages. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-01023**

SHREDDING . . Rotary-knife machines to cut, shred, granulate; models, specifications. Catalog 47, 8 pages. Mercer-Robinson Co., 30 Church St., 4th Flr., New York 7, N. Y. **IEN-01024**

SOLDERING . . How to select and use solder, procedures, fluxes, properties, available types. "Solder," 36 pages. Federated Metals Div., 120 Broadway, Rm. 1043, New York 5, N. Y. **IEN-01025**

SPRINGS . . Table of manufacturing variations for coil springs, picture examples, also wire forms. Folder, 4 pages. Dudek & Bock Spring & Mfg. Co., 2102 W. Fulton St., Chicago 12, Ill. **IEN-01026**

SWITCHGEAR . . Unit substations, switchgear assemblies, circuit breakers; condensed data. Booklet M, 8 pages. I-T-E Circuit Breaker Co., 1899 Hamilton St., Philadelphia 30, Pa. **IEN-01027**

TABLET MAKING . . Presses, coating machines, mixers, specials; illustrated data summaries. "Pharmaceutical Equipment," 16 pages. Arthur Colton Co., 3422 E. Lafayette Ave., Detroit 7, Mich. **IEN-01028**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8275 if you write the maker

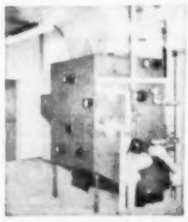
A PAID NEWS ADVERTISEMENT BY NIAGARA BLOWER CO.

Control Atmospheric Conditions with Precision

Control of atmospheric conditions for tests and experiments, maintenance of standard conditions while working with hygroscopic materials, prevention of moisture damage to instruments or materials, improved drying processes . . . all are provided more easily and reliably with this new Niagara "Controlled Humidity" Method.

The equipment is simple, easily maintained and gives trustworthy, automatic operation. A liquid absorbent, "Hygrol", removes the moisture from the air directly so that refrigeration is needed only for sensible heat removal, saving equipment and operating expense.

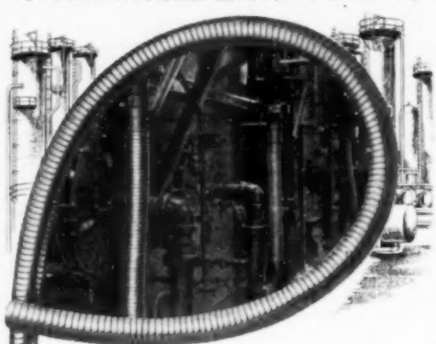
Units provide capacities ranging from 1000 c. f. m. to 20,000 c. f. m. and require less space than conventional apparatus. Conditions are completely controlled at will in the temperature range from 34°F. to 140°F. and below 32°F. if required.



Write for Bulletin No. 112, address:

Niagara Blower Company, Dept. EN, 405 Lexington Ave., New York 17, N. Y.

BREVITY—Identify by IEN - 8276 if you write the maker



CORRUGATED "MUSCLES" THAT LET PIPES MOVE

PENFLEX METAL HOSE ABSORBS THERMAL EXPANSION . . PREVENTS JOINT LEAKS

Penflex flexible metal hose with couplings is used on these burners to absorb any pipe movement due to extreme temperature and pressure changes. Lengths of 4" I.D. interlocking four wall galvanized steel hose are installed on each burner. Provides safety and high, uninterrupted flow of volatile fluids. Leakproof, tough and flexible.

Penflex engineers can help you solve flexible tubing application problems. Penflex manufacturers a complete line of four wall, interlocking and seamless welded corrugated tubing . . from 1/8" I.D. and up . . automatic barrel fillers, accessories and fittings. Write for illustrated folder, "Flexneering," containing valuable flexible tubing data for your product application.

Pennsylvania Flexible Metallic Tubing Company, Inc., 7280 Powers Lane, Phila. 42, Pa.
Branch Sales Offices: Boston • New York • Chicago • Houston • Cleveland • Los Angeles

Penflex
HEART OF INDUSTRY'S LIFE LINES

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NOW!

Clear, two way Voice Communication between Mask Wearers *over Yards or Miles*

WITH THE
M·S·A MASKFONE

★ Sound-powered, completely self-contained—no batteries or other external power source.

★ Permits direct telephone contact between mask wearers in toxic remote areas.

★ Transmits instructions to individuals, clearly and quickly.

★ Gives mask wearers added confidence; assures greater efficiency on every job.

Easily attached to gas mask or oxygen breathing apparatus equipped with an M.S.A. All-Vision Facepiece with Clear-tone Speaking Diaphragm, the M.S.A. Maskfone transmits messages between mask wearers over yards or miles. Ideal for maintenance and survey operations in hazardous areas, the M.S.A. Maskfone speeds all operations and assures greater safety by relaying conditions of the job instantly and understandably.

The complete Maskfone assembly includes a transmitter, earphones with head harness, handset, and 125 feet of cable on a revolving reel, all contained in a sturdy carrying case. For full details, ask for bulletin No. B-21. A demonstration will be gladly arranged; just contact your M.S.A. Representative.

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BRADDOCK, THOMAS AND MEADE STS.
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SAFETY EQUIPMENT HEADQUARTERS

At Your Service. 54 Branch Offices in the United States and Canada

Call the M. S. A. man on your every safety problem . . . his job is to help you.

BREVITY—Identify by IEN - 8279 if you write the maker

UPTEGRAFF DISTRIBUTION TRANSFORMERS

Dry types or Liquid immersed

1½ to 500 KVA · Prompt Delivery

Large Uptegraff Distribution Transformer, with radiators and enclosed junction boxes. Can be furnished oil or askarel immersed.

Uptegraff Dry-Type Distribution Transformers include sizes up to 500 KVA. Light in weight, easy to install, dependable.

Typical pole-mounted Uptegraff Transformer. Unit shown is self-protecting, 25 KVA.

Uptegraff makes a complete line of transformers for industrial and utility service. Types include: Distribution, Power, Instrument, Specialty. Sizes up to 10,000 KVA.

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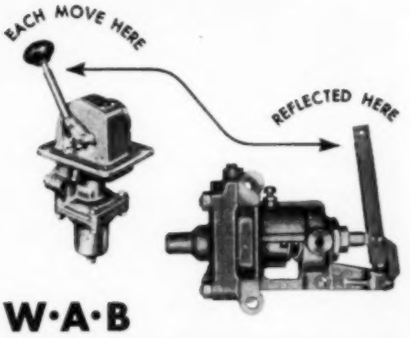
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA
Makers of Power · Distribution · Instrument · Specialty Transformers

BREVITY—Identify by IEN - 8280 if you write the maker

Got Any Problems That Call For

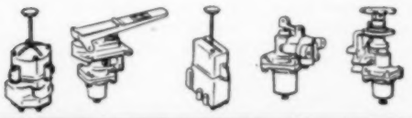
THROTTLING
GRADUATING } **CONTROLS?**
POSITIONING

Here's your Answer...



W·A·B
VALVES and ACTUATORS

The smallest move of the control-valve handle is "echoed" by proportional movement of the actuator to throttle engines, graduate flow in process operations, positioning actuator to modulate fuel feed to boilers, etc. Eliminates complication and maintenance of mechanical linkage. Only connection is an air tube. Place controls at any distance from operation, centralize command of multiple operations. Hand, foot and cam operated valves available. Ask for Bulletin IDA 9481-1.



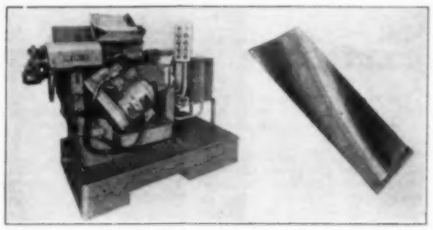
WESTINGHOUSE
AIR BRAKE COMPANY
WILMERDING, PENNA.
INDUSTRIAL PRODUCTS DIVISION

Factory Branch: Emeryville, Calif.
Distributors throughout the United States
Consult your Classified Directory
Distributed in Canada by:
Canadian Westinghouse Co., Ltd., Hamilton, Ontario

BREVITY—Identify by IEN - 8282 if you write the maker

MILLING . . Profile machine for use on jet compressor blades

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.



Style 86 is a new hydraulically-operated automatic machine to mill the airfoil form, including leading and trailing edges, on jet-engine compressor blades. The work locates in the machine from the finished root form at one end and a center at the other end. Roller-type backrests steady the blade during the cutting operation, while it travels across the milling cutter lengthwise, to maintain rigid support throughout the stroke.

The work is indexed after each stroke, the number of indexes and the space between each being determined by the spacing of pins in an index plate. At each stroke, a developed-end cam controls lateral position of the blade root in relation to the cutter. Airfoil form is generated by means of a master cam which is made directly from the engineer's master glass layout. The machine is equipped with a coolant pump and automatic controls to start and stop coolant flow.

The operator loads a work piece and then presses a start-cycle button. This causes the work spindle, tailstock and backrest to clamp hydraulically and to lower the work to cutting position at a controlled rate of speed. On reaching this position the work is moved laterally at the controlled rate across the cutter by a hydraulic cylinder to within ⅛ in. at each end of the stroke where it is slowed down for this last portion. The spindle, tailstock and backrest are unclamped automatically after each cut. The part is indexed the predetermined amount for the next cut and spindle, tailstock and backrest are clamped again. Alternate cutting and indexing is repeated until the part has rotated 360 degrees and reaches the end of the last cut. Here the work head rises to loading position and the machine comes to rest with the work spindle, tailstock and backrest unclamped.

Bulletin 50305, 4 pages, presents description, specifications and a photograph of the machine.

BREVITY—Identify by IEN - 8283 if you write the maker

SAWING . . Hydraulic feed table for company's band saw machine

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.

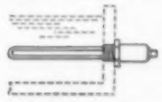
For work load to 3,000 pounds

New table with a separate motor-driven hydraulic pump and feed mechanism is available for application in place of the standard table on the company's band-saw machine. The new unit straddles the base after removing the original table. It takes bulky work and provides limited pressure feed to about 200 lb. Forward is maximum at 18 fpm. and reverse is at 36 fpm. The table is available as a part of a new machine or can be specified for machines now in service.

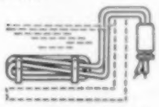
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8284 if you write the maker

BREVITY—Identify by IEN - 8285 if you write the maker



G-E Calrod heaters are available in a wide range of sizes, shapes, ratings and sheath materials for "screw-in" . . .



or "over-the-side" installation. Thermostatic control will assure you of accurate temperatures and minimum power consumption.

Water, oils, plating baths, degreasing solutions and many other liquids do a more efficient job when accurately heated. And one of the fastest, most accurate and efficient methods of heating liquids is with G-E Calrod immersion heaters . . . by putting the heater *right in the liquid* for maximum heat transfer with minimum heat losses!

FREE BULLETINS, GEC-1005A—"Electric Heaters and Heating Devices" and GEA-5077, "Heating Liquids With Electric Heaters" will help you select and apply the heaters best suited to your jobs. Write to *Apparatus Dept., Sec. 720-16, General Electric Co., Schenectady 5, N. Y.*

*Reg. U. S. Pat. Off.

GENERAL ELECTRIC
720-16

BREVITY—Identify by IEN - 8286 if you write the maker

GET THE *Thor* STORY

ON PORTABLE ELECTRIC

GRINDERS

. . . with Shock Absorber Spindle

Write for Catalog E-2

Only Thor Silver Line Grinders feature the exclusive "shock-absorber" spindle that provides longer service . . . easy, smooth handling . . . faster, more economical grinding. Ask your Thor distributor for a demonstration.

4", 5", 6" WHEELS

Right Angle Grinders and Bench Grinders also available

Belt Sanders
Bench Grinders
Drills
Grinders
Hammers
Impact Wrenches

Thor PORTABLE POWER TOOLS

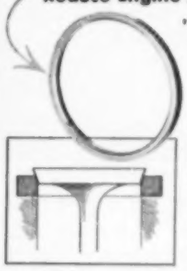
Nibblers
Nut Setters
Polishers
Sanders
Saws
Screwdrivers

INDEPENDENT PNEUMATIC TOOL CO., AURORA, ILL.

BREVITY—Identify by IEN - 8287 if you write the maker

Reduce Engine Maintenance With...

"HAYNES STELLITE" ALLOY
Trade-Mark
VALVE SEAT INSERTS



Over 170,000 miles of trouble-free service are usually given by HAYNES STELLITE alloy valve seats in diesel engines for buses and trucks. In gasoline engines, too, these alloy seats have phenomenal life between valve grinds.

The reason HAYNES STELLITE alloy valve seat inserts give such superior service is that they are made of a hard (Rockwell C51-54), cobalt-base alloy. The seats have excellent resistance to heat, corrosion, and erosion. They provide a tight valve fit long after ordinary seats have to be reground to prevent loss of power and waste of fuel.

For further information about HAYNES STELLITE alloy valve seat inserts and for prices, get in touch with our general offices in Kokomo, Indiana.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes Stellite" is a trade-mark of Union Carbide and Carbon Corporation

BREVITY—Identify by IEN - 8288 if you write the maker

5 WAYS A BETTER BUY

1. Maximum head contact
2. Head perfectly concentric with body
3. Burnished threads - class 3 fit
4. Flush head surfaces
5. Non-slip hex wrenching

Allen

FLAT HEAD CAP SCREWS

In 95 standard sizes, NC and NF threads from leading distributors everywhere. Ideal for heavy duty fastening of thin plates, strips, moldings and sheet metal parts. Write factory for full information.

WARNING
Allen-Type screws aren't necessarily Allen-Made. Get genuine "Pressur-Formd" Allen ⬡ Head screws in this black and silver box.

ALLEN ALLEN HEAD
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

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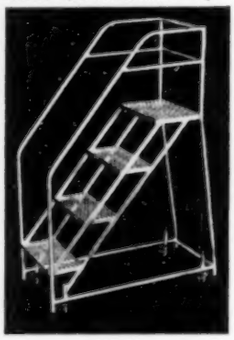
A REALLY *Safe* ROLLING STEP LADDER



Casters carry ladder, but rubber tipped legs "lock" to floor when in use.

High storage is no longer a hazard and pick-up or stock operations can be safely speeded when Ballymore all steel Safety Ladders are used.

Available in one, two, three step models without handrails and three, four and six step models with handrails. Wire baskets, which leave both hands free, are optional.

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THE BALLYMORE COMPANY Wayne 4, Pa.

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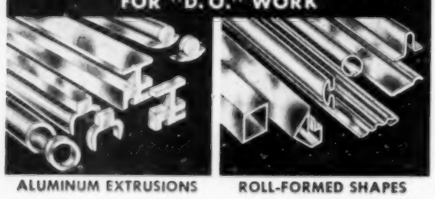
PROMPT DELIVERY!
FOR "D.O." WORK



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Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

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"Send us your new literature for review"

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TAPES . . Parallel-fiber non-woven cotton tape: uses in manufacturing, packaging, shipping. "Print-Ad String," 4 pages. Chicago Printed String Co., 2302 W. Logan Blvd., Chicago 47, Ill. **IEN-01030**

TESTING . . Equipment for vibration fatigue; data on models to 100 lb. "How Much Vibration . .", 6 pages. All American Tool & Mfg. Co., 1012-16 Fullerton Ave., Chicago 14, Ill. **IEN-01031**

TESTING . . Laboratory equipment; catalog data on new product developments, list prices. Bulletin 515, 16 pages. Andrew Technical Service, 3803-7 N. Clark St., Chicago 13, Ill. **IEN-01032**

TESTING . . Strain-gage assemblies to measure torque in shafts; models, instruments. Bulletin 328, 8 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. **IEN-01033**

TESTING . . "Balphot" metallograph; illustrated presentation of features, specifications. Catalog E-232, 20 pages. Bausch & Lomb Optical Co., 633-37 St. Paul, Rochester 2, N. Y. **IEN-01034**

TESTING . . Machine to test equipment under acceleration force to 120 G; specifications. "'G' Accelerometer," 4 pages. Genisco Inc., 2251-35 Federal Ave., Los Angeles 64, Calif. **IEN-01035**

THERMOMETERS . . Indicating and recording types; models, ranges, also pressure gages. Catalog G-143-B, 8 pages. Electric Auto-Lite Co., Mulberry & Champlain, Toledo 1, Ohio **IEN-01036**

THERMOMETERS . . Mercury-in-glass types, also glass hydrometers, specials; types, construction, ranges. Catalog, 36 pages. Quality Glass Co., 109 Elm St., Conshohocken, Pa. **IEN-01037**

THREADING . . Series-F magazine-feed machine to tap pipe and conduit fittings; operation, models. Folder F-100, 4 pages. Cleveland Tapping Machine, 1203 Camden, Canton 6, Ohio **IEN-01038**

TRANSFORMERS . . For instrument use; data on current, potential and metering types. Bulletin S-501-B, 28 pages. Standard Transformer Co., 140 Dana St., Warren, Ohio **IEN-01039**

TRAPS . . Impulse-type steam trap, ½ to 2 in.; operating sequence diagrams, size and selection data. Bulletin T-1740, 24 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. **IEN-01040**

TRUCKS . . "Traveloader" 5-ton lift truck with side-mounted forks; construction features, uses. Bulletin AD-30A, 12 pages. Lull Mfg. Co., 3610-14 E. 44th St., Minneapolis 6, Minn. **IEN-01041**

TUMBLING . . "Honite" abrasive materials for tumbling and burring; types and applications. "Barrel Finishing," 12 pages. Minnesota Mining & Mfg. Co., 902 Fauquier, St. Paul 6, Minn. **IEN-01042**

VALVES . . Separable-body line valve in hand, solenoid, pneumatic designs; construction, selection. Catalog 1500-B, 20 pages. Annin Co., 3502 Union Pacific Ave., Los Angeles 23, Calif. **IEN-01043**

VALVES . . Series 700-W three-way pneumatic operating valves; ratings. Spec. Sheet 416-1, 4 pages. Brown Instruments Div., 4456 Wayne Ave., Station 40, Philadelphia 44, Pa. **IEN-01044**

VALVES . . Gate and needle types of Worthite alloy, also bars, fastenings; sizes. Folder W-350-B5C, 6 pages. Worthington Pump & Machy., 423 Worthington, Harrison, N. J. **IEN-01045**

VISES . . Stand-mounted adjustable-jaw pneumatic unit to hold castings for cleaning; specifications. "Casting Grip CG-2," 4 pages. Joy Mfg. Co., 1951 Oliver Bldg., Pittsburgh 22, Pa. **IEN-01046**

WAXES . . Properties and uses on 8 waxes including replacements for Carnauba and Japan wax. Looseleaf Catalog, 11 sheets. Concord Chemical Co., 78-82 E. 2nd St., Morristown, N. J. **IEN-01047**

WELDING . . Application data on 100 welding, brazing, hard-facing alloys, chart. "EutecRod Guide," 6 pages. Eutectic Welding Alloys Corp., 40-42 172nd St., Flushing, N. Y. **IEN-01048**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8291 if you write the maker

STOP ACCIDENTS
with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

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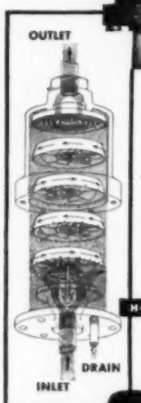
MANUFACTURERS OF SELF-STICKING PRODUCTS
PIPE MARKERS · SAFETY SIGNS · PRINTED "SCOTCH" TAPE · STENCILS
W. H. BRADY COMPANY
1639 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 8292 if you write the maker

Let The ARIDIFIER

CLEAN YOUR AIR AND GAS LINES

Removes 92% Oil, Water and Dirt



The Aridifier gives you positive removal of oil, moisture and other foreign matter from air or gas lines. With paints and lacquers it often eliminates bloom and imperfections in finish. It provides dry lines for ceramics, sand blasting, for air cleaning, etc. Wherever the need exists for *dry clean air or gas*, the Aridifier delivers the goods. Easily installed. No maintenance problem. 10 models available. Capacity range: As low as 7 CFM to 17,000 CFM.

BULLETIN 147 Tells The Complete Story

HOW IT WORKS Exploded view shows how four multi-blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

Made By The Manufacturers of Logan Lathes and Shapers.

Logan ENGINEERING CO.
4902 LAWRENCE AVE., CHICAGO 30, ILL.

BREVITY—Identify by IEN - 8293 if you write the maker

WEATHER RESISTANT *Rubber Parts*

WEATHER RESISTANT STOCKS

	Before Aging				After Aging (7 — 70 hrs. @ 212° F.) (7 — 70 hrs. @ 158° F.)		
STOCK NUMBER	DUROMETER HARDNESS Shore A Scale	TENSILE STRENGTH p.s.i.	ELONGATION per cent	LOW TEMP °F (3 hr test)	DUROMETER HARDNESS Shore A Scale	TENSILE STRENGTH p.s.i.	ELONGATION per cent
408	66	2223	590	−70	156	1951	473
507	65	2418	360	−70	168	2344	323
526	58	2055	420	−70	160	2997	400
566	78	1546	250	−70	184	1706	215
720	60	2384	300	−50	*60	1953	238
622	65	2283	350	−30	*62	2239	433
623	80	2081	233	−30	*82	2016	173
847	50	1569	548	−30	*60	2000	338

*A.S.T.M. D746-44T

● Featuring resistance to sunlight, ozone, freezing temperatures and salt air, STALWART-compounded weather-resistant rubber stocks are available in mass produced parts for application in aircraft, automobiles, trucks, marine equipment, electrical assemblies and railroad rolling stock.

These newly developed rubber stocks can be supplied in precision molded, extruded, die-cut, or lathe-cut shapes having varying degrees of hardness, tensile strength and elongation to meet the demands of specific applications.

In addition to weather resistance, these parts can have the capacity for withstanding other deteriorating forces such as abrasion, compression and chemical action. For applications involving extreme temperatures as low as −110° and as high as +500° Fahrenheit, parts can be fabricated from Silicone Rubber compounds.

STALWART is prepared to meet individual requirements as well as S.A.E. and A.S.T.M. specifications. Write today for the new 16-page illustrated catalog No. 51SR-1.

STALWART RUBBER COMPANY
8152 Northfield Road • Bedford, Ohio

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Weighs Less... and way less trouble

because it's Well-Cast

This Well-Cast magnesium permanent mold wheel casting—a 1¼ lb. light weight—reduces the overall weight of the hand truck on which it's used. Tough as an American in Korea, it's also a push-over to machine. Same thing applies to our sand castings in either magnesium or aluminum. Want to lose some weight?

40 Years' Experience

Well-made wood and metal patterns • If you would like to get the Wellman magazine each month, drop us a note on your business letterhead.

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2510 EAST 93rd STREET ★ CLEVELAND 4, OHIO

BREVITY—Identify by IEN - 8296 if you write the maker

INCREASE production with these 3 Commander PRODUCTION TOOLS

1

Adjustable MULTI-DRILL

★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and ruggedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastics are drilled.

2

Commander TAPPER

★ 1 Tapper Handles Taps 0 to ¾"
★ Automatically Sensitive... Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

The Tapper that "Thinks for the Operator"

Commander Tappers "think for the operator"—automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping—permit faster tapping, better work, even with inexperienced operators. Torque control provides positive tap protection from 0 to ¾" . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.

3

ORDINARY CHIPS

CHIP BREAKER CHIPS

Commander DRILL CHIP BREAKER

Gives you reduced drilling costs because you get:

★ Faster Drilling—Drill Speeds increased 100% or more.
★ Deep Holes—8 to 20 times drill dia.
★ Accurate Holes ★ More Holes per hour
★ More Holes per grind

Commander Drill Chip Breakers are equipped with Morse Taper Drivers and ½" chucks.

Write for illustrated Circulars on Commander Production Tools. Your nearby Commander Distributor carries the full line—write for his name.

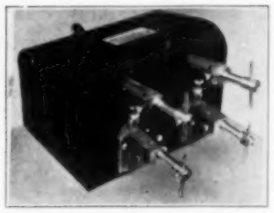
Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

Products of *Commander* . . . Builder of Production Tools

BREVITY—Identify by IEN - 8298 if you write the maker

WELDING . . Resistance equipment is powered by discharge from condenser

Source: FEDERAL TOOL ENGINEERING CO.
530-34 Mulberry St., Newark 5, N. J.



Double assembly of electrodes to provide two adjacent welding stations has been added to the company's line of Tweezer-Weld equipment, previously described IEN-7780-50. Operation, as in the previous equipment, is on 110 or 220-volt ac. to charge the condenser through suitable vacuum tubes and a transformer in the power unit not shown in the illustration.

Discharge for welding is actuated by the operator and acts through a transformer to the electrodes. They grip the work and "follow through" in the company's patented welding action as the sudden current discharge brings the work up to weld temperature between the electrodes.

BREVITY—Identify by IEN - 8299 if you write the maker

FLOORS . . Sealing liquid penetrates into and hardens concrete

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, St. Paul 1, Minn.

Single gallon lists at $3.70

New liquid hardener and etcher has been added to the company's line of concrete-floor materials to prepare a floor prior to sealing it. Application cleans, etches, hardens new and old concrete and prevents the floors from dusting or staining. A treated floor is resistant to attack by alkalis, salts, oils and acids. Slipperiness is minimized.

The material is poured on the floor surface and is spread by using a stiff brush or floor machine. It is allowed to remain for 20 to 30 min. and then a second application is made to cover any dry spots before final flushing with clear water. The liquid contains acid and is applied using the usual precautions for this condition. Packaging is in gallon cans, six to a case, and in 5-gal. drums as standard containers.

BREVITY—Identify by IEN - 8300 if you write the maker

PLIER . . Combination tool with accessory parts for general utility

Source: EMIL GREINER CO.
22-24 N. Moore St., New York 13, N. Y.

Plier, screw driver, opener, knife blade, wire cutter, file and punch make up this new combination tool. The parts are made of tempered tool steel. Finish is nickel plating. Overall dimensions are 5½ by 1⅛ inches. The tool is supplied in a leather case. List price is about $11.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8301 if you write the maker

CAL-WIC WIRE CLOTH

In all Meshes, Weaves and Weights

Filtering, screening or grading—whatever your special job demands may be—Cal-Wic Wire Cloth is available in the right mesh, weave or weight to meet your requirements. Resistance to corrosion, abrasion and temperature extremes assured through the use of appropriate metals and alloys.

The long-wearing qualities of Cal-Wic Wire Cloth take on added importance during times like the present.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado.
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, Calif.

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

BREVITY—Identify by IEN - 8302 if you write the maker

SAFETY AND SAVINGS TIP!

SYLPHON PACKLESS VALVES prevent leakage —in or out

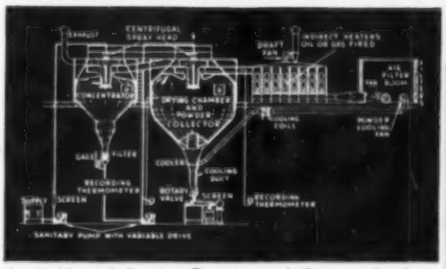
No. 304-N Sylphon Packless Valve comes in sizes from ½" to 2" for pressures up to 150 lbs. No. 304-NV is ideal for vacuum service. Other sizes and types available.

• Installed on pipe lines carrying gasoline, oil, or other volatile liquids and vapors—Sylphon packless valves stop leakage, protect against fire, explosion or other damage. They prevent waste, provide vacuum protection. Many sizes and types. Used in chemical plants, oil refineries, power plants, aboard ships. Write for Bulletin PN-813.

FULTON SYLPHON DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 8303 if you write the maker

IMPROVED DEHYDRATING SYSTEM



Centrifugal Spray Dryer and Concentrator

For dehydrating
- Chemicals
- Pharmaceuticals
- Blood or Blood Plasma
- Milk Products
- Eggs
- Vegetables
- Coffee and many other products

A complete spray drying plant employing a unique centrifugal type spray head. No high-pressure pump is used, and due to the design of the spray head, emulsions as well as solutions can be dried. No clogging or wearing of nozzles is caused by the suspended solids. The powder is collected and cooled in the drying chamber.

Concentrator Available Separately

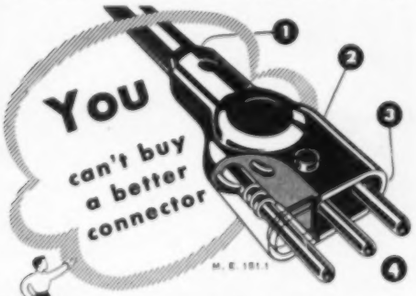
Concentrator can be operated as separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

WRITE FOR FREE BOOKLET

Attractive bulletin illustrates and describes spray drying plants; explains operation in detail. Shows plan views; application photos. Send for your FREE copy today. 651

DRYING & CONCENTRATING CO., 332 S. Michigan Ave., Chicago, Ill.

BREVITY—Identify by IEN - 8304 if you write the maker



. . . AND HERE'S WHY

Falls, blows, oil, acids, sunlight and moisture little effect the life or performance of JOY electric plugs or receptacles. Molded as one-piece Neoprene units they can't crack or shatter and won't become "out-of-round". Before you buy, it will pay you to learn why these and other worthwhile features have made them an outstanding choice of American industry.

1. Sturdy one-piece cable-connector assembly.
2. Safe, long lasting resilient Neoprene jacket.
3. Water-Seal prevents moisture infiltration.
4. Contacts firmly embedded in connector body.

Consult a JOY Engineer or write for your free copy of Bulletin MC108 on the JOY electric connector family today.

100 YEARS OF ENGINEERING LEADERSHIP—1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

BREVITY—Identify by IEN - 8305 if you write the maker

Genuine Alemite

foot operated pump . . .

- Holds 25 lbs. of grease!
- Builds up to 8,000 lbs. pressure!
- 6 foot hose with hydraulic coupling!

A real work saver! Easy foot-pedal pump action gives operator use of both hands in lubricating bearings or parts. Ruggedly built for long, trouble-free service. It's Alemite Model 6299L, hose assembly included.

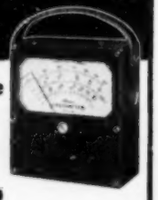
WRITE NOW for free catalog. Address requests to Alemite, Dept. K81, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE
REG. U. S. PAT. OFF.
Industrial Lubrication Equipment

BREVITY—Identify by IEN - 8306 if you write the maker

Instant and Accurate Reading of Air Velocities

. . . with the portable



Alnor VELOMETER

If you have a problem involving measurement of air velocities, take a tip from production men in almost every industry who depend on rugged, *accurate* Alnor Velometers. This precision-built, self-contained, portable instrument gives instant, accurate readings anywhere—in plants, mines, mills or laboratories. Measures speed of flow through ducts, grilles, furnaces or in the open. Needs no calculations or reference charts—anyone can use it and get accurate readings. Available in a wide range of scales, and with a wide assortment of jets and fittings if needed. You'll want full details and prices, so write for Bulletin 2448-G. Illinois Testing Laboratories, Inc., Room 517, 420 No. LaSalle St., Chicago 10, Illinois.

Alnor — PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 8307 if you write the maker

SEND FOR THIS!

- Have you checked your scale needs? Get latest information on the Toledos that help you guard costs . . . speed production. Send for catalog today. Toledo Scale Co., Toledo 1, Ohio.

Printed Weights—eliminate human errors—assure that weight-cost records are right from the start!

50th ANNIVERSARY 1901-1951

TOLEDO
HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 8308 if you write the maker

PYROMETER . . Immersion design to read the temperature in molten steel

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.

A thermocouple, the company's Speedomax recorder and a set of three signal lights make up a new immersion pyrometer to read steel-bath temperatures in open hearths and electric furnaces. The recorder operates the signal lamp, usually located near the furnace. A green light stays on as long as the thermocouple circuit is closed. An amber light comes on when the recorder pen moves upscale to show that the couple is in operating position. A red light indicates when the couple registers actual bath temperature and tells the operator when to withdraw the couple.

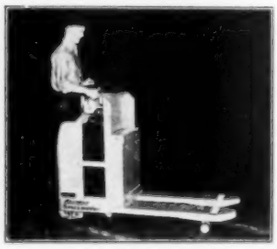
Temperature range is 2,400 to 3,200 deg. F. A separate section at the left edge of the recorder chart covers a range from 0 to 200 deg. F. to provide a check on room temperature and show thermocouple conditions.

A refractory-protected tube is supplied in lengths from 5 to 12 ft. to enclose the platinum-platinum-10-per-cent-rhodium immersion couple. A fused silica protection tip is supplied at the end. The tube encloses a reserve supply of platinum wire and platinum circuit wire from the couple extends to the cold end so heating the tool during immersion does not cause cold-junction error. Standardization is automatic in the potentiometer circuit whenever the thermocouple is connected.

BREVITY—Identify by IEN - 8309 if you write the maker

TRUCK . . Power lift design handles 2 ton pallets in narrow aisles

Source: LYON-RAYMOND CORP.
35-83 Madison St., Greene, N. Y.



New assembly of the company's Space-Maker battery-powered truck mounts a pair of forks, measuring 9½ in. in width, that can be raised through 4 in. from 3¼ in. above the floor. The truck will handle double or single-face pallets with loads to 2 ton. Power is supplied by a 12-volt battery that mounts in a compartment measuring 8½ by 29 by 31 inches. The battery itself can be either a 6-cell lead-acid unit or a 10-cell Edison battery with ratings to 440 and 300 amp. hr. respectively.

The carrying frame measures 30 to 60 in. in length and 24, 27 or 30 in. in width. Overall length of the power unit and the platform area occupied by the operator is 28 inches. The operator controls the truck movement at a handwheel and switch for free speed to 6 miles per hour.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8310 if you write the maker

PURE WATER PROBLEMS SOLVED WITH Barnstead EQUIPMENT

DISTILLED WATER? DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed. Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

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Catalog 8125 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

First in Pure Water since 1878

Barnstead STILL & STERILIZER CO.
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BREVITY—Identify by IEN - 8311 if you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

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Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 8312 if you write the maker

GALS. PER MINUTE
FEET PER HOUR
% SHRINKAGE

All measured electrically with WESTON TACHOMETERS

Precise indications from ONE rotating shaft

Simply mount the compact a-c or d-c Weston generator at the rotating shaft or part, and wire to one or more indicators placed wherever desired. Indicators can be calibrated for any function of R.P.M. Speed changes indicated instantly and smoothly without pointer oscillation.

Speed-ratio from TWO rotating shafts

New WESTON Tachometer indicates the speed-ratio of 2 rotating shafts or parts. Indicates directly the speed-ratio of rolls, the % stretch or shrinkage of textiles, elongation of metals, etc. Remote and duplicate indications possible, with scale marked in desired units.

New SLOW-SPEED Electrical Tachometer

Expanded scale accurately indicates speeds as low as 1 R.P.M. without pointer oscillation. No intermediate gearing employed. Complete data from your local WESTON representative, or by writing Weston Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey, manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

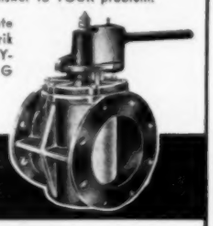
BREVITY—Identify by IEN - 8314 if you write the maker

VALVE LEAKAGE COSTS MONEY!

STOP YOUR LOSSES WITH DeZURIK VALVES

Every leaking valve is an expensive valve, piling up costs in line-losses as well as in shutdowns, clean-up time, repairs and replacements. DeZURIK Easy-Operating PLUG VALVES will stop those losses in your plant because they STOP LEAKS. On any flow—air, liquid, fibrous, slurry—DeZurik's long-life, rubber-faced plugs seal dead-tight every time. They're YOUR answer to YOUR problem.

Write for complete catalog of DeZurik friction-free EASY-OPERATING VALVES.



DeZURIK SHOWER CO. SARTELL, MINN.

MADE IN ENGLAND BY MILLSPAUGH, LTD. SHEFFIELD

BREVITY—Identify by IEN - 8315 if you write the maker

Experience Proves...

RHOADS Tannate® LEATHER BELTING

offers more operating advantages and economies than any other means of power transmission on a great many applications.

If you are planning new equipment it will pay you to investigate Tannate Flat Leather Belt Drives . . . available from 1/4 HP to 2500 HP. We will gladly send you more details about Tannate, with engineering advice, if desired.

PRODUCERS OF FINE LEATHER FOR 249 YEARS

J. E. RHOADS & SONS

35 NORTH SIXTH ST., PHILA. 6, PA.

BREVITY—Identify by IEN - 8316 if you write the maker

insist on "buried" integrity in your products

In the durable goods field most of the products are composed of many component parts. Acadia Synthetic Rubbers are contributing importantly to the superiority of thousands upon thousands of these products on land, sea, and in the air—from battleships to tiny instruments. For years manufacturers in hundreds of industries have found by experience that, with Acadia Synthetic Rubber parts in their products, they will never have trouble from that source. Acadia is a "buried" but vital component for products of highest integrity. Insist upon it!

for every synthetic rubber requirement

sheets • tubing • strips • channel • washers
seals • bellows • gaskets • rings
extrusions • cut parts

Resists oil, age, wear, heat, light

ACADIA Synthetic PRODUCTS

Pioneers of Synthetic Rubber and Plastics • Sheets • Extrusions Molded Parts

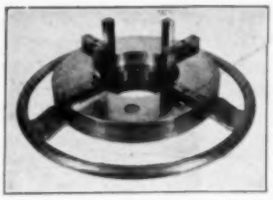
DIVISION WESTERN FELT WORKS

4035-4117 Ogden Avenue, Chicago 23, Illinois

BREVITY—Identify by IEN - 8317 if you write the maker

CHUCK . . Scroll type design for application on glass working lathes

Source: WESTCOTT CHUCK CO. P. O. Drawer 270-A, Oneida, N. Y.



Sizes range to 22 in. in nominal work diameter for this new scroll-type chuck with its aluminum operating hand wheel and scroll thread for clockwise or counter-clockwise operation as specified. The chuck has been designed primarily to handle cathode-ray tubes. It is made in three and four-jaw assemblies for round and for rectangular tubes. A 16-in. unit can be made to hold a 20-in. tube in the three-jaw design or a 20-in. rectangular tube in the four-jaw type. A 22-in. chuck will take a 20 by 27-in. cathode-ray tube.

BREVITY—Identify by IEN - 8318 if you write the maker

SCREWDRIVING . . Electric tool for small screws, also to set nuts

Source: INDEPENDENT PNEUMATIC TOOL CO. 173-77 N. State St., Aurora, Ill.

Series ED is a new addition to the company's Silver Line of portable electric tools. The new unit is available in 13 attachment and speed variations to drive screws to No. 12 and to set nuts to 1/4-in. thread. Three speeds are 500, 800 and 1,100 rpm. in straight and 25-deg. angle-attachment assemblies. Two speeds at 600 and 880 rpm. are available in right-angle models with positive, kickout and double-slip clutch as specified.

BREVITY—Identify by IEN - 8319 if you write the maker

PROTECTING . . Salt tablet dispenser for workers operating in hot locations

Source: STANDARD SAFETY EQUIPMENT CO. 226 W. Ontario St., Chicago 10, Ill.

Clear plastic housing holding 1,000 coated salt tablets is filled and sealed by the manufacturer to eliminate the possibility of contamination. A release mechanism at the bottom of the container is operated by finger or hand pressure to deliver one tablet at a time. When the dispenser has been emptied it is discarded and a new filled one is put in its place. Crystal-M is the designation for the 1,000-tablet size. Crystal-I is a smaller unit holding 500 of the coated tablets.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8320 if you write the maker

Made of ramie, strongest of all organic fibers . . .

NEW NAVALON

lasts longer than other cold-liquid Packings!

Longer packing life...less down time . . . lower packing costs—that's how Johns-Manville Navalon packing pays off in reciprocating service against fresh and salt water, brine, cold oil, and other cold liquids.

Navalon has the high tensile strength and long-lasting, rot-resisting qualities that have made ramie fiber famous for centuries. An exclusive Johns-Manville process imparts unusual lubricating properties that further assure long life.

For details, see your local packing distributor—or send for folder PK-52A. Address Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville PACKINGS & GASKETS

BREVITY—Identify by IEN - 8321 if you write the maker

Order Drill Jig Bushings from EX-CELL-O's Huge Stock

EX-CELL-O maintains a stock of over a quarter-million drill jig bushings in Detroit and also ample supplies in New York, Los Angeles, and Toronto. Orders for standard sizes can be filled immediately. Write today for your free copy of Ex-Cell-O Bushing Catalog No. 35371.

XLO 51-9

EX-CELL-O CORPORATION

DETROIT 32 • MICHIGAN

BREVITY—Identify by IEN - 8322 if you write the maker

Kester Solder

Kester engineers, with over 100,000 different types and sizes of solder available, will specify the right flux-core solder for the job.

Easier to Use

Using the most suitable solder for each operation will enable solderers to work at top speed without sacrificing quality. No rejects.

Top Quality

Only the finest grades of tin and lead commercially available used. Fluxes — chemically correct.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39
Newark, N. J. • Brantford, Canada

KESTER SOLDER

SEND FOR FREE MANUAL, "SOLDER and Soldering Technique"

BREVITY—Identify by IEN - 8323 if you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE® ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48

Most complete publication of its kind

Industrial Roll Division

RODNEY HUNT MACHINE CO.

*Reg. U. S. Pat. Off.

173 Main Street, Orange, Mass.

BREVITY—Identify by IEN - 8324 if you write the maker

This new three-phase Inductrol gives you more kva of regulation in a smaller floor space than ever before possible.

General Electric's NEW INDUCTROLS

(dry-type induction voltage regulators)

will help you get out more production

New improved Inductrols have been introduced this year for both single-phase and three-phase circuits, 600 volts and below. These new dry-type regulators automatically maintain correct voltage on your equipment and do not require expensive fireproof vaults. The attractively styled all-steel cabinets completely enclose all live parts for greater safety. Standard automatic regulators are available for circuits ranging from 3 kva, 120 volts up to 500 kva, 600 volts.

For advice on how, when, and where to apply Inductrols, get in touch with your G-E sales representative or authorized agent.

Write for Bulletins GEC-712 and GEA-4508. *General Electric Company, Schenectady 5, New York.*

GENERAL ELECTRIC

404-80

BREVITY—Identify by IEN - 8325 if you write the maker

MATERIAL HANDLING *News*

READ 'EM AND REAP

SAFETY SAVES!

Cartoons and a light touch sell the idea that **safe** operation and good care of materials-handling equipment pay off for company **and** operator. Pocket size. Available in quantity.

BASIC FACTS

For a clear understanding of modern handling principles and practices, have your entire staff read this one. Pocket size.

CONDENSED CATALOG

A complete, compact showing and basic specifications of the Clark Leadership Line—fork-lift trucks, industrial towing tractors, powered hand trucks and special handling attachments.

MOVIE DIGEST

Clark movies enable you to **see** at your convenience modern machines in action. Synopses of films widely rated "the best in the materials-handling field," and how to borrow them.

These up-to-date publications will prove exceedingly valuable in cutting your handling costs and in getting the utmost benefit from your equipment. They are yours for the asking—any or all of them. Simply use the coupon.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS

AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 19, MICHIGAN

Please send the following: ☐ SAFETY SAVES ☐ BASIC FACTS ☐ CONDENSED CATALOG ☐ MOVIE DIGEST

Name_____

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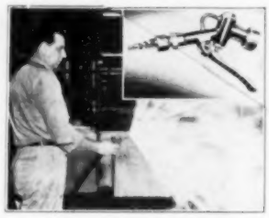
City_____ Zone____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

BREVITY—Identify by IEN - 8327 if you write the maker

SPRAYING . . Spiral nozzle to extinguish, cool, lay dust, wash

Source: BETE FOG NOZZLE INC.
83-87 Pierce St., Greenfield, Mass.



New small size has been added to the company's spiral spray nozzle, previously described IEN-10564-49, to provide a unit that can be applied on an ordinary garden hose and operated at 30 to 120-lb. pressure. The nozzle is available separately or in a kit including adapters to provide for a spray range from ordinary plain nozzle operation through flat spraying to delivery of a fine mist that can blanket and extinguish small fires. Applications include laying dust prior to sweeping, dampening foundry sand, cooling machines and molds, washing coal or gravel, cleaning windows and floors.

BREVITY—Identify by IEN - 8328 if you write the maker

BOILER . . Electrically heated, 1½ bhp., 15 and 50 lb. pressures

Source: LIVINGSTONE ENGINEERING CO.
102 Grove St., Worcester 5, Mass.

Presure controls steaming rate

The company announces addition of a Model LP-1½ and a Model 400-1½ to its line of electrically-heated boilers, previously described IEN-8623-50. Both new units are available for operation on 220, 440, or 550-volt single-phase ac. Overall dimensions are 14 by 22 by 28 inches. Input is 15 kw. for maximum steam output. Construction and operation duplicate the previously developed units.

BREVITY—Identify by IEN - 8329 if you write the maker

NAME PLATE . . Laminated plastic to be adhered to a clean surface

Source: ALLEGHENEY PLASTICS INC.
319 Chestnut Road, Sewickley, Pa.

Plasquick trade names a new laminated-plastic name plate carrying a dry adhesive bonding film on its rear face. This film is made tacky by application of a solvent just prior to application. The plate adheres to the surface with strength increasing with age. The adhesive film will not crystallize and has high resistance to shock.

Colors, shapes, sizes, as well as the information on the name plate, are all subject to specifications. The company also can supply the required solvents in capsules, dauber bottles or in gallon lots or drums. A sample, a capsule of solvent and application instructions are available on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 8330 if you write the maker

In the tool kit of every contractor, builder, or maintenance man . . . in every metal-working shop, the Kett Power Saw is a time and labor-saving necessity. Light-weight but rugged and powerful, the Kett tool zips with amazing ease and speed through most any kind of sheet material . . . mild steel up to 10 gauge, aluminum to 3/16", plastics and other soft material up to ¼" thick.

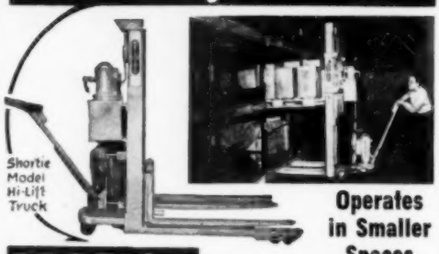
Immediate Delivery. Write to Dept. A-8 for full details and descriptive literature.

The KETT TOOL COMPANY

5 EAST THIRD STREET CINCINNATI 2, OHIO

BREVITY—Identify by IEN - 8331 if you write the maker

A most useful Stacker



Operates in Smaller Spaces

MOTO-TRUCS *Shortest* BATTERY OPERATED *Walkie Trucks* BUILT!

Shorter turning radius and unusually easy control through exclusive easy grip roller handle, make Moto-Trucs invaluable equipment for shops and warehouses. They are famous as space and labor savers.

The power cost is extremely low—only a few cents per 8-hour day.

Moto-Truc braking system (brake on drive wheel) ensures complete control—added safety.

Write for Bulletin No. 51

HI-LIFT, PALLET, PLATFORM AND TRACTOR TYPE TRUCKS

The **MOTO-TRUC Co.** 1952 E. 59th Street CLEVELAND 3, OHIO.

Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

BREVITY—Identify by IEN - 8332 if you write the maker

Mono-Cushions

cut the cost of bumps

CUSHION THE FLOOR

Big, burly Mono-Cushions soak up jolts and jars both ways, protect floors from the pounding a heavily laden truck can dish out.

CUSHION THE LOAD

Mono-Cushions are saving hundreds of users plenty of money by reducing load breakage, giving both load and driver a smooth ride.

CUSHION THE TRUCK

Mono-Cushions can reduce truck maintenance as much as 40 per cent, because they absorb more shock and shock load than any other type of industrial tire, size for size.

YOUR BEST SOURCE FOR TIRES is the manufacturer of your equipment. He can supply you, through his service branches, with the type of Monarch Tire engineered for your equipment.

THE MONARCH RUBBER COMPANY

201 LINCOLN PARK HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

BREVITY—Identify by IEN - 8334 if you write the maker

MERCOID
AUTOMATIC CONTROLS

THEY ARE USED FOR THE CONTROL OF TEMPERATURE, PRESSURE, LIQUID LEVEL AND MECHANICAL OPERATIONS.

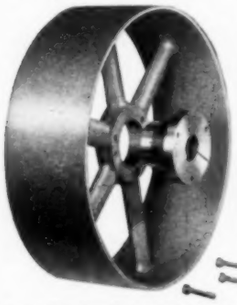
THE MERCURY SWITCH IS A FEATURE IN MERCOID CONTROLS. THE REASON FOR THE MERCURY SWITCH IS THE ADDED SAFETY-BETTER PERFORMANCE AND LONGER CONTROL LIFE-ALL OF WHICH ARE IMPORTANT WHEREVER CONTROLS ARE REQUIRED

WHY CONSIDER LESS WHEN YOU CAN GET SO MUCH MORE

WRITE FOR COMPLETE CATALOG

THE MERCOID CORPORATION • 4201 BELMONT AVE., CHICAGO 41, ILL.

BREVITY—Identify by IEN - 8335 if you write the maker



SAVE WITH PYOTT QUE-DEE CAST-IRON PULLEYS

Pyott Que-Dee (quick detachable) Flat Belt Pulleys offer the same economies and time-saving advantages in assembly and field operations as Pyott Que-Dee Sheaves. The Taper-Tight Bushing, with standard keyway, slips easily over shaft. The tapered hub of the Que-Dee Pulley slides easily into position on the Taper-Tight Bushing. Three bolts pull pulley bushing and shaft into a positive powerful pull-up fit. For dismounting, the same bolts, inserted in demounting holes, act as jack screws to loosen pulley.

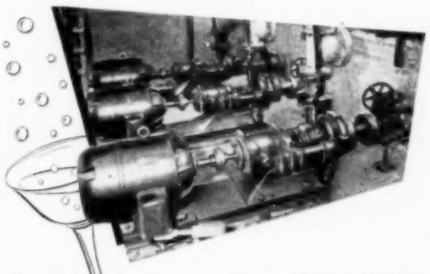
Immediate Delivery in popular diameters and face widths from complete factory stocks or your mill supply.

WRITE FOR CATALOG 50

PYOTT FOUNDRY & MACHINE CO.

326 NORTH SANGAMON STREET • CHICAGO 7, ILLINOIS

BREVITY—Identify by IEN - 8336 if you write the maker



Guzzling Corrosive Cocktails To Make Better Copper

Making "grade A" copper depends on the constant circulation of hot, corrosive copper sulphate. This battery of Nagle type TW pumps guzzles hundreds of gallons of this metal-ravaging mixture a day in a smelting and refining plant. Famous Nagle features like these will keep on the job years longer; select corrosion-abrasion alloys for water end parts, ample slippage seal adjustment, maintenance that is a marvel of simplicity. Follow the lead of hundreds of Nagle pump users. Write today for the complete Nagle solution to your most corrosive or abrasive pumping problems . . . vertical, horizontal and self-priming.

Nagle Pumps, Inc.

INDUSTRIAL PUMPS FOR ABRASIVE APPLICATION

1241 CENTER AVE., CHICAGO HEIGHTS, ILL.

BREVITY—Identify by IEN - 8337 if you write the maker

PAINTING . . Semi-automatic machine to spray small mask positioned work

Source: CONFORMING MATRIX CORP.
330 Toledo Factories Bldg., Toledo 2, Ohio

New design is illustrated for the company's spray-painting machine, previously described IEN-4114-50, in which spray guns are located to deliver upward from beneath the table top and control for the guns is centered at a panel on the right of the table. Space is provided toward the rear to mount a conveyor belt to deliver and take work away.

Paint masks of the company's electro-formed design, previously described IEN-4375-48, are positioned interchangeably in a table opening toward the front. The machine is operated by air and is controlled hydraulically. Surplus spray falls away to be exhausted out of the back of the housing. The equipment is subject to specification for given work.

BREVITY—Identify by IEN - 8338 if you write the maker

CORROSION PROOFING . . Liquid asphalt for buried pipe and foundations

Source: ZONE CO.
915-19 N. Main St., Fort Worth 6, Texas

List price
$1.42 per gallon

Dira-Rode is a new asphaltic coating for application by brush or spray at an excavation site before back filling. The coating protects against attack by acids, alkalis. It insulates against electrolytic action. It is applied cold to cover about 100 sq. ft. per gal. on new pipe or 50 sq. ft. per gal. on old work. Two forms include one plain for foundations and one containing reinforcing asbestos for pipe lines. Packaging is in 55-gal. drums.

BREVITY—Identify by IEN - 8339 if you write the maker

LADDER . . Four step steel unit designed for use in a stock room

Source: BALLYMORE CO.
137-41 Pennsylvania Ave., Wayne, Pa.

Storkart is a new ladder made with a ¾-in. steel-tube frame and expanded steel skid-proof steps, all in welded assembly. It is equipped with a pair of hooks to attach over the push bar of a stock truck at heights from 30 to 38 in. above the floor. Its bottom end is mounted on ball-bearing retractible casters that move upward to contact rubber feet on the floor when an operator is standing on any step.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8340 if you write the maker

SAVE TIME WITH ELECTRONIC AMPLICALL

THE BETTER BUSINESS INTERCOM SYSTEM

SEE YOUR CLASSIFIED PHONE BOOK under "Intercommunication" for your local AMPLICALL specialist, or write us direct

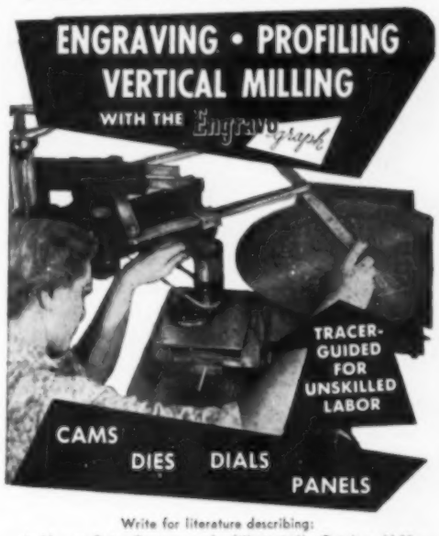
Here's the way to gear up for increased output! AMPLICALL 2-second speech contact between all departments saves time—cuts costs—measurably increases plant and office efficiency. AMPLICALL keeps personnel on the job every working minute—*gets more work done for every operations dollar spent*—pays for itself quickly! Get the full details on fast-action AMPLICALL *today.*

Electroneering is our business

SOUND EQUIPMENT **Rauland** INTER-COMMUNICATION

RAULAND-BORG CORPORATION • 3523-E ADDISON ST., CHICAGO 18, ILL.

BREVITY—Identify by IEN - 8341 if you write the maker



Write for literature describing:
1. Heavy Duty Engravograph (Illustrated) Catalog H-23
2. Portable Engravograph — Catalog IM-23

NEW HERMES, Inc. 13-19 University Place New York 3, N.Y.

CANADA: 359 St. James St., Montreal

World's Largest Manufacturer of Portable Engraving Machines

BREVITY—Identify by IEN - 8342 if you write the maker

Two Masoneilan Controllers

That Provide Precise Control at Moderate Cost

IN A MAJORITY OF PRESSURE APPLICATIONS
IN MANY TEMPERATURE APPLICATIONS

No. 2700 Pressure Controller — **No. 3700 Temperature Controller**

NOTE THESE MASON-NEILAN FEATURES

1. Same basic control mechanisms for pressure and temperature instruments insure simplicity, permit standardization of parts.
2. Pneumatic feedback — usually found only in more expensive proportional controllers . . . precise response.
3. Control point setting mechanism provides extreme accuracy of adjustment and easily read expanded index scale.
4. Proportional band adjustment between 3 and 50%.
5. Compact and sturdy case and internal mechanisms; all important internal parts of bronze, brass or 18-8 stainless steel.
6. Control action reversible with either bourdon or bellows.

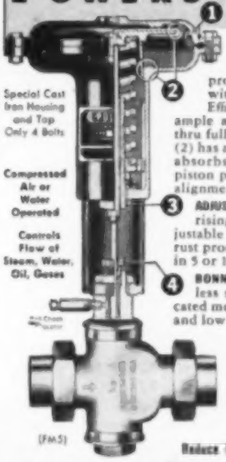
Masoneilan models 2700 pressure and 3700 temperature controllers meet many industrial application requirements. They are moderate in cost . . . provide excellent performance, precise proportional response and ease of adjustment.

MASON-NEILAN REGULATOR CO.

ADAMS STREET, BOSTON 24, MASS., U.S.A.

BREVITY—Identify by IEN - 8343 if you write the maker

Get BETTER Control with POWERS FLOWRITE VALVES



VALVE TOP—Durable moulded neoprene diaphragm (1) has positive sealing bead which provides increased sealing action with increasing control pressure. Efficient diaphragm form insures ample and constant operating power thru full travel. Piston Plate Assembly (2) has a free floating thrust plate which absorbs side thrust. Closely guided piston plate maintains stem in accurate alignment.

ADJUSTING SCREW—Ball bearing non-rising type with starting pressure adjustable from 0 to 17 psi. Has enclosed rust proofed steel spring for full travel in 5 or 10 psi. control pressure change.

BONNET ASSEMBLY—Polished stainless steel stem in preformed lubricated metallic packing insures long life and low hysteresis.

VARIETY of VALVE BODIES
Sizes ½" thru 8"

For line pressures below 250 psi. Rugged construction to withstand piping strains.
Write for Circular FMV

Reduce Maintenance with FLOWRITE VALVES

THE POWERS REGULATOR COMPANY

2737 Greenview Avenue, Chicago 14, Illinois

Established 1891 • Offices Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 8344 if you write the maker

A Better Strainer! —by DAVIS

—with BOLTED CAP

Bolted cap construction is used in sizes from 1½" to 12".

If you think all strainers are alike, ASK THE MAN WHO HAS TO GET INTO THEM! Davis builds strainers with bolted caps (instead of threaded caps) because numerous engineers have asked for them. It's easier to remove bolts than to try to unscrew a large thread cap after a strainer has been in use. Also makes possible locating blow-off at lowest point; no sediment pocket. Don't confuse Davis precision-made strainers with ordinary pipe fittings. Available in wide choice of types for steam, air, gas, or fluids. Semi-steel, bronze, or steel bodies; screwed or flanged. Pressures to 1500 p.s.i. Brass, stainless or monel trim. Ask for bulletin 100-A.

DAVIS REGULATOR COMPANY

2529 South Wasktenaw Ave., Chicago, Ill.

BREVITY—Identify by IEN - 8345 if you write the maker

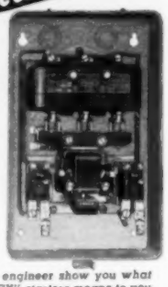
Setting new standards in starter performance

The CLARK TYPE "CY" AC MAGNETIC MOTOR STARTERS with the NEW ARC QUENCHING PRINCIPLE

These rugged magnetic starters provide the extra protection and dependable operation of "Mill-Type" heavy-duty construction and design.

- No tools needed to inspect contacts. Components easily removed.
- Melting alloy-type overload relays.
- Vertical lift clapper type magnet uses no springs.

another CLARK first!



The CLARK TYPE "CY" Starters feature the combined use of strong multi-turn magnetic blowouts with twin-break contacts. They employ an entirely new principle of arc interruption. The blowout coils are concentric with the contacts. The magnetic field quenches the arc either by lengthening or confining it. By forced rotation the arc moves continually from a hot to a cold spot—minimizing burning or pitting of contacts. The solid upper arc shield prevents the accumulation of hot gases between wiring terminals—minimizing phase-to-phase failures.

Let a CLARK application engineer show you what this new line of CLARK "CY" starters means to you in increased production and lower maintenance.

THE CLARK CONTROLLER CO.

ENGINEERED ELECTRICAL CONTROL • 1143 EAST 153RD STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 8346 if you write the maker

Want to know more about GAS ANALYSIS?

READ THIS NEW 8-PAGE ENGELHARD BULLETIN

Look at these typical data-packed pages

YOU WILL FIND a wealth of material on a wide range of gas analysis problems and their solutions in the new Engelhard 8-page illustrated bulletin. It explains how Engelhard equipment provides complete, sensitive, accurate analyses by the proven thermal conductivity method. The bulletin also contains a *valuable thermal conductivity table* that you will want to keep for handy reference. *Write for your free copy today. Ask for Bulletin 800A.*

Please send me FREE copy of Bulletin 800-A on Gas Analysis.

Name .....

Company .....

Address .....

City ..... State X1234

CHARLES ENGELHARD, INC.
850 PASSAIC AVENUE, EAST NEWARK, N. J.

BREVITY—Identify by IEN - 8347 if you write the maker

TESTING . . Electronic instrument to signal flaws in metal structure

Source: BRANSON INSTRUMENTS INC.
431 Fairfield Ave., Stamford, Conn.

Ultrasonic vibration generated by this new battery-powered worker-carried instrument is transmitted through a plastic-faced crystal into a metal structure of uniform section such as the rail joint assembly shown in the illustration. The waves travel downward through the metal in a column measuring ⅜ in. in width of the crystal. They are reflected from the first surface they strike. When the reflecting surface is substantially parallel with the top surface of the structure the waves are reflected back to their point of origin and a standing wave is set up in the rail.

An electronic circuit in the instrument generates an audible tone in a pair of headphones. The pitch of this audible tone is proportional to the length of the standing wave. It has a frequency of about 1,000 cycles when the instrument has been set to signal in connection with a structure in which there is no flaw. This frequency applies as a reference. Any defect will reflect the wave sooner or will deflect it to change the pitch of the signal and indicate presence of the defect.

Application is made after a thin film of oil has been spread over the test surface to provide good transmission for the ultrasonic wave. The crystal head can then be slid along this surface, the plastic face protecting the crystal which is mounted in swivel arrangement at the end of a contact handle so it will maintain good contact even though the handle tilt is altered. Continuous sections of rail can be checked by sliding the head along the top. Definite positions can be selected at a joint section. The instrument is enclosed in a waterproof canvas case and weighs about 11 pounds. List price is $490.

BREVITY—Identify by IEN - 8348 if you write the maker

WELDING . . Electronic timer for manual, air or motor driven welders

Source: PHOTOSWITCH INC.
75-79 Broadway, Cambridge 42, Mass.

New design of the company's Type-30CR3 electronic timer, previously described IEN-6173-47, permits selection of "beat" or "non-beat" operation by connecting certain terminals on an interior panel. This panel is protected with a Bakelite dead front to prevent contact with the terminals when setting a timing interval at the pointer-equipped dial at the panel top.

Interval is adjustable between 3 and 120 cycles. Operation is on 110 or 220-volt 50/60-cycle ac. The output side is a single-pole double-throw switch with relay-contact rating at 10 amp. on 110-volt ac. Housing is about 5 by 4½ by 9½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8349 if you write the maker

YOU CAN FILTER FASTER AT LESS COST

with **Titeflex**

The Titeflex method of using *permanent* membranes provides filtration areas and permits flow rates *unequalled* by other filters of similar sizes. In addition, the Titeflex special backwash system lessens downtime by cleaning out all residue automatically, without manual labor. These and other exclusive Titeflex features give users *more convenience* in handling a difficult mechanical problem. If you use filters, get the facts about Titeflex.

SEND FOR THIS FREE BULLETIN
Clearly shows Titeflex advantages, lists sizes, capacities and filtration areas of all models. Write today for free copy.

TITEFLEX, INC.
506 Frelinghuysen Avenue, Newark 5, New Jersey

BREVITY—Identify by IEN - 8350 if you write the maker

Left—Style 14500 R Suspended Head Bag Closing Machine. Hang it up any place!

NOW! EFFICIENT BAG CLOSING FOR SMALL PLANTS

HERE is the popular, economical Union Special Suspended Head Bag Closing Machine that offers many plants an excellent solution for handling varying volumes of work. Check these features: Easily installed anywhere in your plant with overhead pulley and counterweight or top balancer! Built-in motor, thumb-controlled clutch, and automatic brake! Plug it in and go to work! Adaptable to fabric or paper bags of various sizes!

SEND FOR THIS NEW BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE COMPANY, 410 N. Franklin St., Chicago 10, Ill.

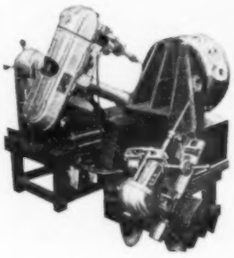
UNION SPECIAL

BREVITY—Identify by IEN - 8351 if you write the maker

WALKER-TURNER DRILL HEADS

work at all angles, handle work faster, and cut machining costs

8 SEPARATE OPERATIONS are consolidated into one. Four standard Walker-Turner Drill Heads have been mounted horizontally to drill both ends of two double-end tube closures simultaneously.



THIS JIG APPLICATION IS TYPICAL OF WALKER-TURNER Drill Head flexibility. Due to weight of the work and the cumbersome special jig required, provision was made for attaching drill heads in correct position. Result: work can be loaded in a natural position, production is speeded.

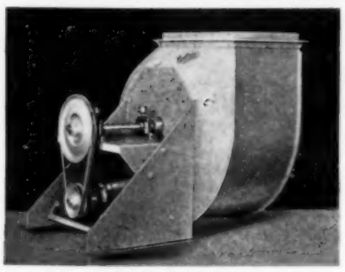
IF YOU MACHINE steel, iron, aluminum, copper or brass, plastics or wood, investigate the possibilities of adapting these low-cost, high production tools to your specific needs. See your distributor or write for catalog describing Walker-Turner Drill Press Heads for every drilling problem.

SOLD ONLY THROUGH AUTHORIZED DEALERS

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

BREVITY—Identify by IEN - 8353 if you write the maker

The *Inexpensive* Way To Get RELIABLE VENTILATION!



WRITE FOR BULLETIN 3720 ON THESE POPULAR FANS—

"Buffalo" BELTED VENT SETS are lightweight, compact non-overloading fans, available in sizes from 500 to 20,000 c.f.m. at ¼" static. Simple to install, high in efficiency, quiet running. Available with hood for outdoor installation. Write for facts NOW!

BUFFALO FORGE COMPANY
496 Broadway Buffalo, New York
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all Principal Cities

"Buffalo" BELTED VENT SETS

BREVITY—Identify by IEN - 8354 if you write the maker

THIS SQUIRT LOOSENS-

FROZEN BOLTS.. BEARINGS

It's fast and accurate—shoots 15 feet—a drop or a squirt. It's labeled Kroil—so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when Kroil creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick," so says a service organization for fire extinguishers.

Kroilers are priced at $1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil—(listed at $3.50) for $4.75, f.o.b. factory.

If you are not one of the 8,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

KANO LABORATORIES 1071 Thompson Lane Nashville 11, Tenn.

BREVITY—Identify by IEN - 8355 if you write the maker

WITH STEAM OFF, WING REVOLVING UNIT HEATERS ARE AN EXCELLENT COOLING SYSTEM

Cooling with HEATERS!

The discharge outlets revolve slowly, just as they do for distribution of heated air, projecting a cooling stream of constantly moving air over and around obstacles, to all parts of the working area. The oppressive, stagnant atmosphere is relieved, bringing renewed vigor to workers in the sticky summer months.

Wing Revolving Unit Heaters provide the same thorough circulation in the winter months with properly heated warm air. The heated air is projected over the entire plant, bypassing obstacles, eliminating hot blasts, and reaching hard-to-heat corners. For all season comfort and efficiency, versatile Wing Revolving Unit Heaters are unsurpassed.

Write for Bulletin HH-8.

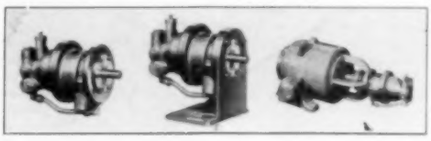
L. J. Wing Mfg. Co.
140 Vreeland Mills Rd, Linden, N. J.
Factories:
Linden, N. J. • Montreal, Canada

Wing Revolving UNIT HEATERS

BREVITY—Identify by IEN - 8356 if you write the maker

PUMP . . Axial piston hydraulic for constant delivery, to 5,000 pounds

Source: OILGEAR CO.
1567-A W. Pierce St., Milwaukee 4, Wis.



Type HG axial rolling-piston pump is a fixed-stroke unit to deliver oil in one direction only at a rate depending on the drive-shaft speed to a maximum of 1,800 rpm. Each unit consists of the axial pump and a supercharging gear pump with a gear-pump relief valve and an adjustable reverse-flow type of high-pressure relief valve. The supercharging pump delivers an excess of about 135 ipm. at 100 lb. and this can be employed if required for auxiliary purposes.

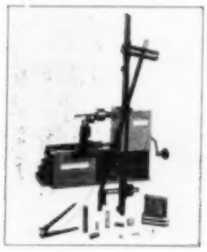
In each assembly, the pump, the work and the machine on which the pump is employed are protected against overloading. Applications include heavy duty pushing, pulling, lifting and lowering, load maintenance on clamping rams.

Three sizes are included in the line under the designations HG-530, HG-830 and HG-850. Drive can be specified with a 3, 5, 7½, 10 or 15-hp motor. With a 3-hp. drive and operating speed of 1,750 rpm. the maximum pressure rating for the three in the order they have been named is 1,370, 660 and 1,370 pounds. Delivery capacity based on 3,000-lb. pressure for the first two pumps is 620 and 1,080 ipm. Rating for the 5,000-lb. unit is 580 ipm. With a 15-hp. drive the first two pumps rate 620 and 1,080 ipm. at 3,000 lb. and 1,750 rpm. The largest unit rates 580 at 5,000 pounds. Lubrication is by the pumped oil in the hydraulic circuit.

BREVITY—Identify by IEN - 8357 if you write the maker

WINDING . . Spring making machine winds coil springs to 2 by 8 inches

Source: CARLSON CO.
277 Broadway, Room 1302, New York 7, N. Y.



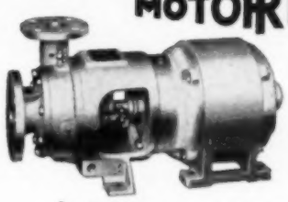
Coiler No. 2 designates larger size of the company's hand-operated spring making machine, previously described IEN-461-50. As in the previous design two spindles issue from the side of the head and a chuck is threaded on one or the other to wind right or left-hand springs. The spindles are rotated by pinion and rack connection to a hand crank, the rack moving up as the winding progresses. The chuck takes drill-rod arbors on which the springs are wound in connection with a slide-mounted winding point. An arbor rack is fitted with 29 arbors, 7 coiling points and a wire cutter. The machine weighs 70 pounds.

Compression springs can be wound to 8 in. in length and to a maximum of 30 coils and on any pitch to 1 inch. The end coils can be closed or squared. Extension and torsion springs can be wound tight or loose to 8 in. in length, either right or left hand, to a maximum of 150 coils. The machine will handle wire from 0.041 to 0.156 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8358 if you write the maker

SAVE 5 WAYS MOTOR PUMP



1. **SAVE ON COST** . . . Compact unit-assembly simplifies construction, lowers weight—pump operates at peak efficiency.
2. **SAVE ON MAINTENANCE** . . . Oversize shaft and deep stuffing box eliminates many packing troubles, reduces leakage.
3. **SAVE ON PARTS** . . . Shaft protected against corrosion and wear by shaft sleeve; oversize bearings sealed against dust and dirt.
4. **SAVE ON SPACE** . . . Compact design; motor and pump in one unit requires little room.
5. **SAVE ON INSTALLATION** . . . No special foundations needed; can be mounted in any position on floor, wall, or equipment.

Sizes from ¼ to 40 h.p. handling up to 1800 g.p.m. against heads up to 600 ft.

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

Get in touch with our nearest branch or write us for complete information.

311-9

BREVITY—Identify by IEN - 8359 if you write the maker

For all TOUGH rotary-drive needs

Wherever you want high torque efficiency in rotary drives that can withstand a lot of quick starts, sudden stops, instant reversals or continuous use for braking action, you'll want these husky, axial-piston HydrOILic Fluid Motors.

They feature advanced engineering that attains highest efficiency *with fewer parts*. This permits more compact construction, saves space, increases strength, permits lower costs, and cuts maintenance needs to the bone.

In more than a quarter-century of specialization in oil-hydraulic equipment, Denison engineers have developed many other improvements in these fluid drives. Write for full information on motors to fit your needs.

- 3 hp to 160 hp sizes
- Torque ratings up to 5585 inch-pounds
- Operating pressures to 5000 psi
- Operating speeds up to 3000 rpm
- Shockproof—can be stopped, reversed, or used for braking at full pressure and speed
- Fully efficient in any position
- Gear reduction attachments and speed controls for smaller models
- Face, flange or foot mountings.

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, Ohio

DENISON HydrOILics

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"From Research to Reality".

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Michigan Machine Shop SAVES $700 ON BRONZE BAR STOCK

in just one year!

DIRECT shipments of N-B-M "Tiger" Bronze reduce this customer's costs 33%

Thirty cents per pound . . . that's what a Michigan Machine Shop saved by ordering "Tiger" Bronze direct from National Bearing Division. And, *overnight shipment of their orders is assured by strategically located warehouses.*

These low prices are made possible by direct-to-you shipments . . . NOT by any sacrifice in quality, because the quality of N-B-M "Tiger" Bronze is high! It's the same alloy we use in Motor Support Bearings for leading diesel locomotive builders . . . *bearings that have to be right!*

15" lengths of "Tiger" Bronze are available in all popular sizes and bar types . . . cored, solid, and hexagon. Order a trial supply of "Tiger" Bronze today . . . you'll get better bearing service and save money!

Quotations and free catalog on request.

AMERICAN Brake Shoe COMPANY
NATIONAL BEARING DIVISION
4930 Manchester Avenue • St. Louis 10, Mo.

PLANTS IN ST. LOUIS, MO. • READING, PA. • MILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

BREVITY—Identify by IEN - 8362 if you write the maker

OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X18, Merchandise Mart Chicago 54, Illinois

BREVITY—Identify by IEN - 8363 if you write the maker

AMERICAN-Standard
First in heating . first in plumbing

The Sanistand

URINAL FOR WOMEN

increases sanitation in factory wash rooms
reduces congestion during rest periods

● Wherever the Sanistand fixture has been installed, reports from maintenance managers have definitely proved that this new urinal is ideal for installation in factory rest rooms. Because it is so sanitary, it reduces the amount of time needed for wash room maintenance, and its convenience speeds up use of rest rooms during rush hours. "Requires minimum of maintenance." "The units enable the rest room to handle more than twice the number of women in the same time." (Just two typical comments from the many received to date.)

And women, too, are enthusiastic about the Sanistand fixture. Nearly 90% of the 5,029 women who used it at test installations reported that they were pleased with the idea of a women's urinal . . . and felt that it was the greatest contribution to public sanitation since the development of water closets.

For additional information about this new fixture, see your plumbing contractor or send in the convenient coupon below. **American Radiator & Standard Sanitary Corporation,** Dept. IEN-2, Pittsburgh 30, Pa.

LOOK FOR THIS MARK OF MERIT

American Radiator & Standard Sanitary Corporation
Dept. IEN-8, Pittsburgh 30, Pa.
Please send me, without obligation, your new Better Rest Room Guide including complete information on the Sanistand fixture.
Name .....
Firm .....
Address .....
City ..... State .....

Serving home and industry · AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · RUSS HEATER · TONAWANDA IRON

BREVITY—Identify by IEN - 8365 if you write the maker

INCINERATOR . . For plant refuse, wet or dry, gas fired, safe to leave

Source: WINNEN INCINERATOR CO.
930-34 Broadway, Bedford, Ohio

Wet or dry refuse, trash, garbage, is completely consumed by this recently improved Model C-20 incinerator when the materials are dumped into an opening at the top of the housing. Twin burners for natural, manufactured or bottled gas are built into the bottom grates to fire into the refractory-lined combustion chamber. An auxiliary burner can be supplied near the top of the assembly to burn away smoke and odors before the products of combustion reach the top rear flue connection. The lower burners have been recently improved to assure continuing operation that will cut through wet materials or any substances inclined to mat on the grates.

Model CB-20, for indoor operation, includes a motor-driven blower and outer jacket panels to insulate the unit. Model C-20, for outdoor operation, omits the blower and the outer jacket. Both have combustion chambers measuring 33 by 33 by 40 in. and grate area measuring 32½ by 32½ inches. Base dimensions are 36½ by 36½ inches. Height is 74½ inches.

The unit will consume 400 lb. of refuse per hr. containing 50 per cent moisture. About one bushel of ashes is normal after a week of constant operation. The incinerator is shipped knocked-down for installation on the job. Shipping weight is 700 pounds. Type C-20 lists at $795. An over-fire burner adds $90 to the list price named.

BREVITY—Identify by IEN - 8366 if you write the maker

PUMP . . Radial piston hydraulic, 3, 5, 10 gpm., pressure to 5,000 pounds

Source: AMERICAN ENGINEERING CO.
2476 Aramingo Ave., Philadelphia 25, Pa.

New information has been published on the company's Hydramite radial-piston hydraulic pump previously announced in 1950. The current design is suited for continuous duty on pressure to 3,000 pounds. It will operate at 5,000 lb. on 10 per cent time-duty cycle with overall efficiency at 85 per cent. It is constant-displacement design and is arranged for direct drive in either direction of rotation.

Radial pistons connect by ball and socket at their inner ends to curved-face shoes that ride on the eccentric forming an integral part of the central drive shaft. The shoes follow the eccentric bearing surface to maintain constant area of contact. Three sizes of assembly rate 3, 5 and 10 gpm. based on 1,150 rpm. and oil of 150 to 300 SSU. and 100 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8367 if you write the maker

A Plywood Panel for every need

Plywood
WOOD OF 1001 USES

Prompt Shipping Service From AETNA Plywood's 4 Warehouses

Millions of feet of plywood in a complete range of sizes and grades are in stock . . . for immediate shipment from Aetna Plywood's Chicago and Branch Warehouses. Over 40 species, sizes 36" x 48" to 48" x 192", 1/16" to 3" thick.

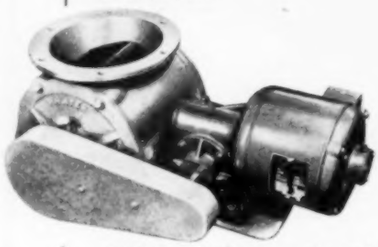
Use plywood for weatherproof shipping containers, partitions, machine bases or in your product. WHEN YOU NEED PLYWOOD FAST . . . CALL ON AETNA PLYWOOD. Send in your "specs" for a quotation, today.

Write for your free Plywood Buying Guide, the Teleply Ticker #532 Price List.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Ave., ARMITAGE 6-7100, Chicago 22, Ill.
Branch Warehouses: Grand Rapids, Indianapolis, Rockford, Ill.

BREVITY—Identify by IEN - 8368 if you write the maker

PRATER ROTARY AIRLOCK FEEDER

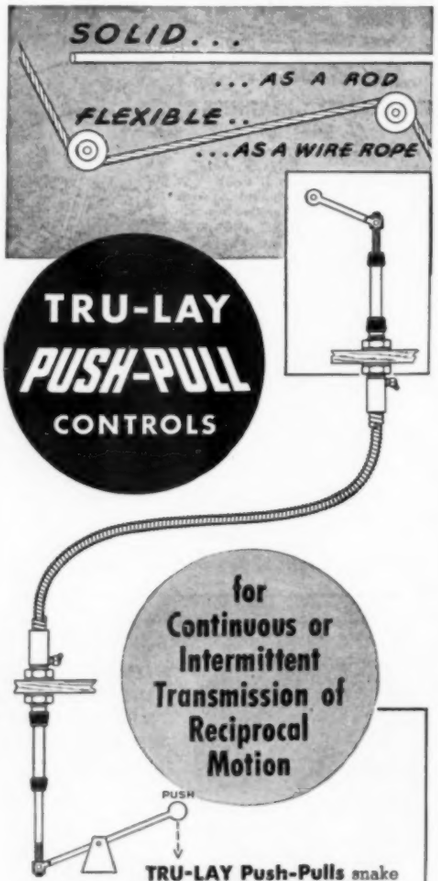


FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains & Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volvanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin.

PRATER **PRATER PULVERIZER COMPANY**
1536 So. 55th Court • Chicago 50, Ill.

BREVITY—Identify by IEN - 8369 if you write the maker



TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.

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2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
In Business for Your Safety

BREVITY—Identify by IEN - 8371 if you write the maker

New Recording Voltmeters and Ammeters

The Latest Developments in Electrical Measurement

Outstanding for

- High actuating torque
- Stability of calibration
- Low electrical burden
- Dependable accuracy

Bristol Series 500 Recording Voltmeters and Ammeters give you these features—plus a number of refinements for convenient operation and servicing.

The new moving-iron measuring mechanism is a type known for high actuating torque and low electrical burden . . . refined by Bristol engineers for greater accuracy and ruggedness.

Write for Bulletin E1111, to THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 8372 if you write the maker

New Miracle Material SILICONE RUBBER

ARCOSIL® SILICONE RUBBER PRODUCTS

"O" Rings
Molded
Extruded
Die-cut
Tubing
Ducting
Couplings
Fiberglass Reinforced

Whether the problem is new product design or the improvement of present design, consider silicone, the amazing new rubber that performs to best advantage where ordinary rubbers fail.

For the answer to any silicone rubber problem, call Arrowhead—specialists in the development and manufacture of silicone rubber products of all kinds.

Trade Mark Reg. U. S. Pat. Off.

ARROWHEAD RUBBER COMPANY
DOWNEY (Los Angeles County) CALIF.
A DIVISION OF MATTHEWS MOTOR BEARING CO., INC.

WRITE FOR ENGINEERING BULLETIN

Gives latest complete data on characteristics and applications of various silicone rubber compounds.

BREVITY—Identify by IEN - 8373 if you write the maker

More for your money!

New STEELITE® WHEELS — with sealed-in ball bearings that keep grease in, dirt out and eliminate axle wear—make American Hand Trucks a better buy than ever! **And most popular models now sell for less than before!**

The side rails and cross bars of these familiar red trucks are channel-section steel for hardest service. Pressed-steel bolted construction keeps maintenance costs down. Light weight and fingertip balance make them the easiest-handling trucks you can buy!

Choose American Hand Trucks from 50 types and sizes for most efficient material handling at lowest cost . . . stocked by distributors everywhere.

AMERICAN PRESSED-STEEL HAND TRUCKS

The American Pulley Company
4242 WISSAHICKON AVE., PHILA. 29, PA.

Please mail free American Hand Truck Bulletin to

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ( ) STATE _____

BREVITY—Identify by IEN - 8374 if you write the maker

TRUCK . . Engine driven fork lift, 7½ ton, particularly for yard duty

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

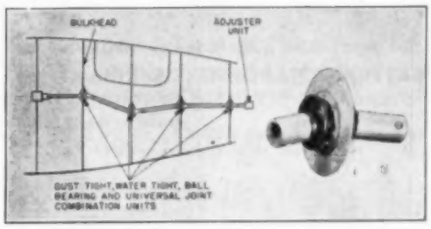
Hydraulic steering as well as lift and tilt movements characterize this new Yardlift-150 truck. A double hydraulic unit supplies the power with direct connection to the 72-hp. Continental engine for all three. Lift speed is at 30 fpm. with a rated load. Tilt is 12 deg. to the rear, 4 deg. to the front. Standard forks measure 48 in. in length by 8 in. in width by 2½ in. in thickness at the heels tapering to ½ in. at the tips. The truck will operate in forward or reverse to 25 mph. and will carry its maximum load up a 15 per cent grade in the first of the four gear changes available.

Underclearance for yard duty is 6⅞ in. at the lowest point at the center of the drive axle. It measures 8 in. at the bottom of the uprights and 13½ in. at the center of the frame with 10 in. at the center of the rear steering axle. Service weight is about 20,300 pounds. Overall length with 48-in. forks measures 200 inches. Greatest width is 98 inches. Overall height in fully raised position is 225 in. with maximum fork height at 210 inches. The truck has a 161-in. outside turning radius and will operate in 128-in. intersecting aisles.

BREVITY—Identify by IEN - 8375 if you write the maker

DRIVE . . Universal joint assembled in sealed ball bearing flange

Source: AERO SUPPLY MFG. CO.
609-13 W. Main St., Corry, Pa.



New combination of universal joint and ball-bearing-equipped mounting flange has been designed for use on rotating control shafts that must contain certain sections at angles with the others. The flange applies on a bulkhead or other structural member riding in fixed position. It centers the joint for shaft rotation at both sides on a required angle.

An assembly for connection to ½-in. shaft weighs 2 ounces, can be employed with torque tubes measuring ⅝, ½, or ⅝ in. in outside diameter.

The shaft members and bearing are made of hardened chrome-molybdenum steel. The seal is synthetic rubber. Exposed steel surfaces are cadmium plated. Wearing surfaces are finished in chromium plate.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8376 if you write the maker

For Dependable PROTECTION Against Hazards of FALLING, SPLASHING, DRIPPING LIQUIDS

Use Century Splash Proof Motors

Century Splash Proof motors eliminate production losses caused by liquids entering the vital parts of the motor. The unique design of the Century Splash Proof frame prohibits water from entering, even when applied with the full force of a hose.

For many years Century Splash Proof motors have proved their dependability on indoor and outdoor installations. Wherever splashing liquids create a hazard, specify the correct Century Splash Proof motor.

Century builds electric motors in a wide range of types and kinds — in sizes from 1/6 to 400 horsepower. Specify Century motors for all your electric power requirements.

Century Electric Company is celebrating its 50th year in the electrical industry.

671R

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

BREVITY—Identify by IEN - 8377 if you write the maker

SAVE MANPOWER BY USING AUTOMATIC CIRCUIT CONTROL

EFFICIENT USE OF MANPOWER is more important today than ever before. Utilize this valuable manpower to the fullest by doing away with unnecessary *manual operation*—where automatic time control can do the job.

GENERAL ELECTRIC time switches furnish automatic time control for almost any job—process timing, pump and blower control, oven or conveyer control, plant lighting, floodlighting.

YOU'LL SAVE TIME and avoid the trouble of switching equipment on and off manually . . . you'll save in power costs that mount up when power is left on overtime.

General Electric offers you a complete line of time switches designed to fit *your* timing needs. See your G-E representative for more information. General Electric, Schenectady 5, N.Y.

T-47 TIME SWITCH: inexpensive, efficient control; for one ON-OFF operation in 24 hrs.

T-37 TIME SWITCH: handles almost any timing problem; rugged, versatile, convenient.

GENERAL ELECTRIC
603-122

BREVITY—Identify by IEN - 8378 if you write the maker

New! Industrial Tissues

Automatic serve-up packages

For Wiping and Polishing

Wiping precision instruments

Let clean, *disposable* KIMWIPES* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 18" in all Supply Centers under stock item #53P23121-800.

Polishing machined parts

Kimwipes
INDUSTRIAL WIPING TISSUES

A PRODUCT of Kimberly-Clark

*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION, IEN-851
Neenah, Wisconsin
Please send me Kimwipes literature and sample.

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BREVITY—Identify by IEN - 8380 if you write the maker

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

BREVITY—Identify by IEN - 8381 if you write the maker

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

BREVITY—Identify by IEN - 8382 if you write the maker

Slash cutting oil and coolant consumption with NUGENT Pressure Filters

Write for bulletin which completely describes Nugent cutting oil and coolant filters.

Three important benefits are offered when your machine tools are equipped with Nugent cutting oil and coolant filters . . . oil consumption is reduced . . . tools are protected against unnecessary wear . . . better machining with fewer rejects is assured.

With Nugent filters you get up to 20 times greater filtering area (compared to other filters of comparable size) plus ease of installation and maximum life with minimum maintenance. Capacities range from ¼ to 320 GPM.

Write for specific recommendations.

NUGENT TRADE MARK Est. 1897

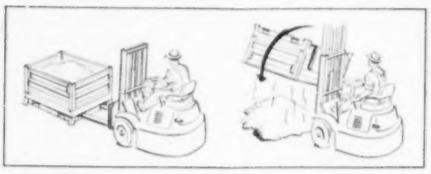
Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO, 22, ILLINOIS

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

BREVITY—Identify by IEN - 8383 if you write the maker

HANDLING . . Collapsible steel box includes pocket for truck lift forks

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.



Model B-50-F is a new collapsible material-handling box in the company's Phil-Box line. Sides and ends fold down to a collapsed height of about 10 inches. They lock in load-carrying position for load capacity to 2½ ton. Reinforced openings in the base provide for insertion of truck forks at the sides or ends and permit the box to be inverted by trucks that are equipped with rotating-fork attachments. The boxes can be stacked in stable position when desired.

BREVITY—Identify by IEN - 8384 if you write the maker

LUBRICATING . . Light machine oil for specific uses on knitting machinery

Source: SUN OIL CO.
1606-10 Walnut St., Philadelphia 3, Pa.

Descriptive booklet upon request

"Light" designates new machine oil that has been developed as a companion product to the company's regular Sunotex machine oil. The new lubricant is intended for use on needles, sinkers and supplementary parts of knitting machinery as compared with application of the regular Sunotex machine oil on gears, cams, slides, bearings. Application prevents corrosion, minimizes wear on needles, eliminates staining. Detail information is contained in a new 16-page pocket booklet, "Sunotex Machine Oil."

BREVITY—Identify by IEN - 8385 if you write the maker

BATTERY CHARGING . . Rectifier and control for use on truck batteries

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Operation of this new selenium-type charging equipment is on a 110-volt 60-cycle line or, with a step-down transformer, on a 220-volt ac. connection. The equipment applies on lead-acid or nickel-alkaline batteries with ratings to 55 ampere hours. It is controlled by timer equipment so all that is required is to plug a battery in, set the time and throw a switch. Temperature compensation is built in. An automatic controller governs the rate as well as the time of charge.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8386 if you write the maker

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true universal wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ⅜" to 4". Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench will do: one TAC set replaces literally dozens of single-purpose hand tools.

makers of advanced tools for industry

TAC

TAC is the registered trademark of

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7117 South Victoria • 10371 Anza Ave. • Los Angeles, Calif.

BREVITY—Identify by IEN - 8387 if you write the maker

Because they wear longer...stand up better to the destructive effects of heat, abrasion, corrosion and chemical action, Wissco Metal Processing Belts have become the accepted standard for varied applications involving processing and heat treating.

They're your assurance of uninterrupted trouble-free production at a time when stoppages cannot be tolerated.

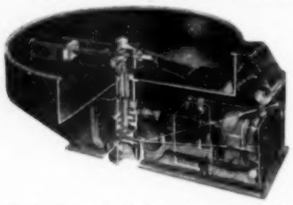
For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

BREVITY—Identify by IEN - 8388 if you write the maker

The Genisco "G" Accelerator . . .



. . . sets the pace for laboratory acceleration testing of aircraft or missile components and calibration of accelerometers or acceleration reacting devices.

- √ Overall accuracy within 1%
- √ Ranges to 110 G
- √ Electrical air and optical provisions to rotating table

Write today for further information.

Other Genisco Items:

- LINEAR ACCELEROMETER TRANSDUCERS
- FLIGHT TESTING FACILITIES
- FLIGHT DATA REDUCTION EQUIPMENT
- ANALOG DIGITAL CONVERTERS

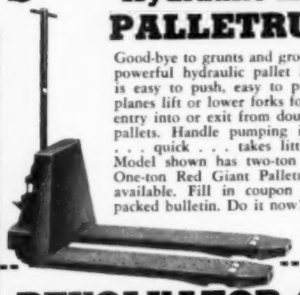
Genisco INCORPORATED
2233 Federal Avenue
Los Angeles 64, Calif.

BREVITY—Identify by IEN - 8389 if you write the maker

NO MUSCLE MEN NEEDED!

RED GIANT Hydraulic Hand PALLETRUCK

Good-bye to grunts and groans! This powerful hydraulic pallet lift truck is easy to push, easy to pull. Slide planes lift or lower forks for smooth entry into or exit from double faced pallets. Handle pumping is simple . . . quick . . . takes little effort. Model shown has two-ton capacity. One-ton Red Giant Palletruck also available. Fill in coupon for fact-packed bulletin. Do it now!



BULLETIN

RE-100

REVOLVATOR CO.
Designers and Manufacturers of Material Handling Equipment
8759 TONNELE AVE., NORTH BERGEN, N. J. • SINCE 1904

Without obligation, please send bulletin on Red Giant Palletrucks

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Position .....
Company .....
Address .....

BREVITY—Identify by IEN - 8390 if you write the maker

for air conditioning, packaging, refrigeration, air, printing equipment, etc.

The "M" Series valves are approx. 4⅝" high, yet have extremely fast action and large capacity for liquids, air and inert gases! They have soft insert seats to prevent leakage — will operate in any position — nylon fabric coated diaphragm for long life — max. power consumption 10 watts — continuous duty! **M-2** two-way normally closed — 5 to 150 p.s.i. — port size ⅜" or ½"; orifice ⅜" — pilot operated. **M-3** three-way normally closed, three-way normally open or directional flow — 20 to 150 p.s.i. — port size ⅜" or ½"; orifice ⅜" — pilot operated. Special models available.

Write for Bulletin No. 493

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 8391 if you write the maker

"The eye of the master will do more work than both his hands."

—Ben Franklin's Almanac, 1757

Touring thy plant with a critical eye can do more for the health of thy business than a trip to Washington.

—Acme Steel Notebook, 1951

Your management eye needs to be a dozen places at once these days—on supplies, on production, on deliveries and all over your plant to keep efficiency high and morale up.

Your Acme Steel representative is ready to help bring you greater thrift in the use of Acme Steel's flat steel strapping and stitching wire in your packaging, shipping, and materials handling operations. He may be able to suggest more efficient ways to use Acme Steel products and accessories to improve your use of the available supply.

In spite of an increase in productive capacity, U. S. military requirements for some products make it impossible for Acme Steel to meet all the demands of the 50,000 customers, representing nearly every American industry, in these rearming times. But Acme Steel tries to help in every way we can—we always have for the past 71 years.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY
Dept. IEN-81, 2838 Archer Avenue, Chicago 8, Illinois

To contact the nearest of our 41 Service Offices in the United States and Canada, check your telephone directory, or write us.

ACME STEEL

Acme Steel Company has enjoyed sound, steady growth under the American business system of open competition. Since 1901 we have made 287 consecutive dividend payments to our stockholders.

5 things you can do to keep your Acme Steel Strapping Tools on the job:

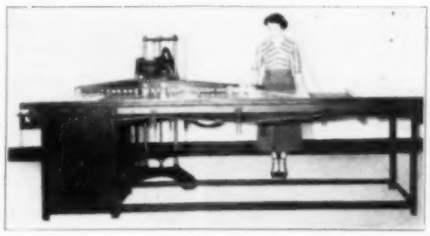
1. Clean and oil every week.
2. Check and clean gripping dogs weekly. Replace when teeth are worn.
3. Detect worn punches and jaws early by checking sealed joints regularly. If in doubt, submit samples, identified by model and serial number, to Customer Service Department, Acme Steel Company.
4. Keep parts list and supply of spare parts handy to make minor repairs. Additional parts lists supplied upon request.
5. Ask us about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, barbed box straps, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, tool mounts, reel stands, coil holders, coil trays.

BREVITY—Identify by IEN - 8393 if you write the maker

PACKAGING . . Heat sealing machine for moisture barrier pouches, envelopes

Source: AMSCO PACKAGING MACHINERY INC.
31st St. & 48th Ave., Long Island City 1, N. Y.



Model DH is a new heat-sealing machine with conveyor feed and an air extractor to close flat filled containers made of barrier-type materials. It is available to specification for any size of container. It operates at 230 ipm. and will make a seal to 1 in. in maximum width. Each seal carries a bead impression running through its center to provide strength without pin pointing or damaging the heat-sensitive inner lining.

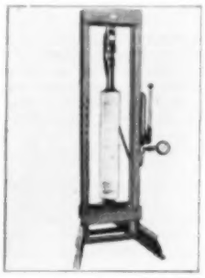
Filled packages move in on a belt conveyor to enter feed-in guides that prevent wrinkling. They move from there to a carrier-belt section. This section consists of two opposing positively-driven rubberized V-belts, heat and oil resistant. They close the open seam of the container and prevent re-entry of air that has been previously exhausted. The container moves along to an open-top pre-heated channel 16 in. in length with heating elements mounted on both sides and controlled by means of a thermostat. This preheater gradually raises temperature through all of the layers of the container and provides for maximum application of heat only in that portion that includes the heat-sensitive film. From this section the container moves between the sealing rollers which complete the operation. The machine measures 66 in. in length by 33 in. in width and stands 62 in. in height. It weighs about 750 pounds.

Booklet, 44 pages, "Packaging Equipment for Barrier Type Pouches, Envelopes and Blankets", presents illustrated detail information on barrier-type containers and on equipment.

BREVITY—Identify by IEN - 8394 if you write the maker

PRESS . . Hand operated hydraulic rates 20 ton, assembles buffs on shaft

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Polishing buffs, employed in the company's line of shaft-type equipment, are removed from and assembled on their shafts by application of this new hydraulic press. It is made of a structural frame with an adjustable head and a hydraulic jack and pump of standard design equipped with a pressure gage. It is shown set up in the illustration for the buff assembly operation. It is suited, in addition, to various operations including assembling, broaching, bending, straightening. Ram travel measures 5 inches. Dimensions inside the frame are 17¼ by 60 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8395 if you write the maker

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

FREE—"HOW-TO" BOOKLET FOR EFFECTIVE OPERATION UNDER CMP

If you have received controlled material allotments under CMP, either as a prime consumer direct from a Government Agency, or as a secondary consumer receiving allotments from your customers, Remington Rand offers a practical manual that will simplify your paperwork. It not only shows you, step by step, dozens of ways to save on clerical routine, but more important still, it lays the groundwork *for getting the end result you want*—a properly balanced, uninterrupted flow of materials to meet your requirements on schedule. At the same time it sets up all the records you need to prove compliance with CMP regulations.

The detailed, time-saving instructions in the booklet are organized under 5 broad headings: Bills of Materials, Allotment Accounting, Production and Planning, Purchasing, Inventory Control. For your free copy of X-1203, phone your local office, or write direct to the publisher, Remington Rand, Room 1254, 315 Fourth Ave., N. Y. 10.

REMINGTON RAND INC., Management Controls Library, Room 1304, 315 Fourth Ave., New York 10, N. Y.

BREVITY—Identify by IEN - 8396 if you write the maker

AIR FORCE routs the enemy!

Don't let Dirt, Dust, and Grit shorten the life of your machinery and equipment. Blast the destroyers out of every crack and crevice with a CLEMENTS-CADILLAC blower-suction cleaning tool. Good maintenance pays!

Eligible for DO-97 Rating. See NPA Regulation #4.

SAVE TIME · MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

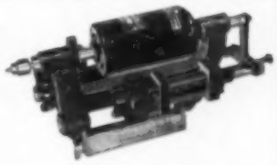
CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 8397 if you write the maker

HERE ARE THE TIME AND MONEY SAVING FEATURES YOU NEED FOR:



Precision High Speed Drilling

These modern drill units speed-up many simple drilling jobs and simplify complicated multi-spindle jobs. Direct drive variable speed spindle provides speeds from 1,000 to 10,000 or 2,500 to 15,000 RPM.

FINGERTIP, VARIABLE SPEEDS eliminate belt changing, provide more compact unit. *You get positive and correct speed for drill size and material.*

POSITIVE, CONTROLLED FEEDS eliminate "surge-through" of drills, gives better holes with less drill breakage, less down time for drill changes.

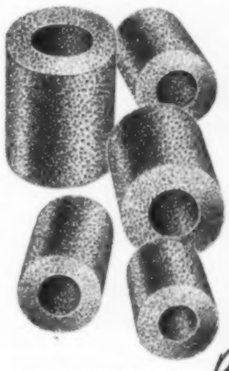
SENSITIVE, PRECISION SPINDLE provides precision holes from .004" to .156" diameter in wood metal or plastics.

OTHER FEATURES INCLUDE fast approach air feed, hydraulic feed adjustment, electric or manual control, deep hole drill cleaning and low price.

Free Data will be sent upon request. Ask for bulletin IEN-851.

The ELECTRO-MECHANO COMPANY
269 E. ERIE STREET, MILWAUKEE 2, WIS.

BREVITY—Identify by IEN - 8398 if you write the maker



CHICAGO Internal Grinding WHEELS

Rapid Delivery

MANUFACTURED TO ORDER

Chicago Internal Grinding Wheels produce better finishes with longer wheel life and cutting action. They're your best buy—"tailor made" to your specifications and speedily delivered.

Advanced production methods assure you perfectly balanced Internal Wheels to meet rigid finishing requirements. Faster delivery . . . with overnight service for special jobs.

WRITE TODAY for full details on all Chicago Wheel products . . . and *free* sample Chicago Internal Grinding Wheel.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 West Monroe St.
Chicago 7, Illinois

BREVITY—Identify by IEN - 8399 if you write the maker

world's largest assortment of standard moulds for small mechanical rubber parts

SEE US BEFORE YOU DESIGN IT!

Save money! Check our huge assortment of standard moulds — chances are we have just the mould you need. Lowest possible prices—fast, efficient service! Get our new 44 page catalog, today.

LAVELLE Rubber Company
1811 W. Hubbard, Chicago, Ill.

WRITE, WIRE, PHONE SPECIFICATIONS — TODAY!

BREVITY—Identify by IEN - 8400 if you write the maker

Worth a Second Look

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

100 YEARS ENGINEERING LEADERSHIP — 1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

BREVITY—Identify by IEN - 8401 if you write the maker

FIRST AID FOR INDUSTRIAL FLOORS

BITUCOTE Ready Patch

PREVENT ACCIDENTS

Keep Bitucote Ready Patch on hand, on a "Crash Truck," to repair floor breaks as soon as they occur
Ready to use—no extras to add
Permanent—Economical
No waiting time—traffic can roll as soon as hole is repaired

ORDER TODAY
Satisfaction Guaranteed
$90.00—55 gal. drum
$55.00—30 gal. drum
Includes Primer
F.O.B. St. Louis

Send for free bulletin—"Stop Floor Hazards"

Bitucote PRODUCTS CO.
1411 Central Industrial Drive
ST. LOUIS 10, MO.
DIVISION OF BRIDGES PAVING CO.

BREVITY—Identify by IEN - 8402 if you write the maker

TESTING . . Electronic meter reads frequency to 4,186 cycles

Source: C. G. CONN LTD.
9952 Beardsley Ave., Elkhart, Ind.

Stroboconn Type 6T-4 is a new direct-reading frequency meter of stroboscopic type. It measures rotating speeds, transient vibration, calibrates and checks oscillators, tachometers and impulse generators. It determines ratios between two or more frequencies. It can be fed directly by a crystal microphone, an ac. tachometer, a magnetic pickup, vibration pickup that will supply 1.5 millivolts input.

A tuning fork in the assembly supplies voltage that is amplified to drive a synchronous motor. The motor, in turn, drives twelve translucent discs, each geared to the next so the speed of adjacent discs differs by the ratio of the twelfth root of two. A U-shaped gas-filled flash tube behind the disc is excited by an amplifier which derives its signal from the input device.

The pattern appears to stand still when the number of segments on a pattern disc, passing a given point in a second, equals the number of flashes per second from the flash tube. The frequency is then read directly opposite the stationary pattern on the instrument panel.

BREVITY—Identify by IEN - 8403 if you write the maker

SEALING . . Synthetic rubber in extruded form for metal joints

Source: MINNESOTA MINING & MFG. CO.
409-13 Piquette Ave., Detroit 2, Mich.

Cures in one hour at 250 deg. F.

EC-1055 is a new synthetic-rubber sealing material that is wrapped in cellophane and packaged in fiberboard cartons. The cellophane is removed and the material is pressed into a seam to fill it. The metal surfaces are then tightened down upon it as upon a rubber gasket. When heated, the material swells about 50 per cent and cures to a tough flexible mass similar to sponge rubber.

Temperature range in which the material remains in serviceable form is between minus 70 and plus 200 deg. F. Excellent resistance is provided against moisture, salt spray and weathering. The material remains flexible down to minus 40 deg. F. It will not bleed through regular automobile paint. Following initial development in sealing metal-to-metal joints in motor vehicles prior to painting and then curing by the heat provided in an oven drying operation, the material is now available for general uses wherever irregular seams are to be filled and sealed.

It has been applied at room temperature in military tank manufacture as a gasket replacement sealer on bolted castings. It applies in sealing storage batteries in plastic cases and is recommended as a flange sealer for glass-coated metal assemblies. Color is black. Packaging in 30-in. lengths totals 1,237 ft. per box of $\frac{3}{16}$-in. diameter, 810 ft. per box in ¼ inch. Average ft. per lb. is 56.2 and 39 respectively.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8404 if you write the maker

One OF A LINE...

APPROVED BY THE AIR FORCE FOR *Dependable Control*

The Series 335 D.C. (AN 8316-2) Guardian Relay is one of a line of famous controls which distinguish Guardian Electric as a dependable supplier to the U. S. Air Force. *Hermetically sealed* (AN-3312) to (MIL-5757) specifications, or with conventional open and special mountings, Series 335-D.C. offers a wide variety of aircraft applications. Built to rigorous aviation standards, it meets the ANR-20-B and the MIL-R-6106. Generous coil winding area permits single windings up to 15,000 ohms. Parallel and double windings available. Write.

GUARDIAN ELECTRIC
1620-J W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 8405 if you write the maker

WHITNEY CHAIN

Takes the Problem out of your Power Drive Designs

Because Whitney Chains are extremely flexible and adaptable to a wide variety of designs, they meet practically all transmission requirements. Their positive grip delivers full power without slippage . . . assures uniform speeds. Their rugged construction and hardened-alloy-steel parts provide maximum service with low maintenance. Investigate Whitney Chains and Cut Tooth Sprockets . . . the *all steel drives* for your designs and equipment. Write:

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 8406 if you write the maker

TO LICK TODAY'S MANPOWER SHORTAGE
Automatic ELECTRIC Trucks
FIRST CHOICE OF ALL 3

MANAGEMENT
Automatic Electric Trucks increased our production 25%. They're indispensable.

MAINTENANCE
My vote goes to Automatic Electric Trucks for rock-bottom maintenance — operating costs.

TRUCK OPERATOR
Automatic Electric Trucks take the work out of my job. They let me handle more goods faster.

Automatic Skylift
Lifts, moves and tiers material ceiling-high.

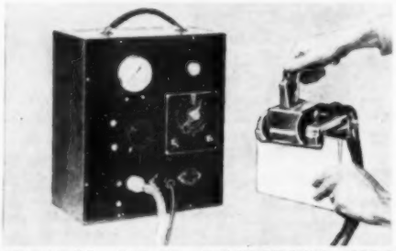
Here's Why They Are America's Largest Selling Electric Trucks

Every day, more companies are discovering Automatic Electric Trucks cut their material handling costs 50% to 75%. Operating with swift, silent ease, Automatic Electric Trucks make more manpower available for more productive jobs . . . help you step up your production . . . turn empty air into extra storage space by stacking ceiling-high and often pay for themselves in as little as months. For complete details write to:

Automatic TRANSPORTATION COMPANY
WORLD'S LARGEST EXCLUSIVE MAKER OF ELECTRIC INDUSTRIAL TRUCKS
DIVISION OF TALE & TOWNE

Automatic Transportation Co., 109 W. 87th St., Dept. M-1, Chicago, Ill.

BREVITY—Identify by IEN - 8407 if you write the maker



WORLD'S MOST POWERFUL HEAT SEALER WEIGHS ONLY 3½ LBS.!

PI-NU-MATIC

Model 6A
PORTABLE HEAT SEALER

Accurately controls Dwell Time — Jaw Pressure — Temperature

LIGHTWEIGHT—Hand tool only 3½ lbs.
POWERFUL—Any jaw pressure to 80 lbs. P.S.I.
DWELL TIME—Accurate, from fraction of a second to 15 seconds • TEMPERATURE— thermostatically controlled • NON-FATIGUING—use it Anywhere! • LOW PRICED—long on results

Seals All THERMOPLASTIC COATED and LAMINATED Vapor Barrier PACKAGING MATERIALS over splices and wrinkles, through contamination . . . without delamination

Write For Descriptive Brochure

PACKAGING INDUSTRIES
50 CHURCH ST., MONTCLAIR, N. J.

Attention Equipment Representatives: Some choice territories still open . . . Write, wire or phone M. A. MYERS, 840 N. 6th Street, Phila. 23, Pa. Phone LOmbard 3-6477

BREVITY—Identify by IEN - 8408 if you write the maker

RECORDERS
RECORD TIME - COUNT QUANTITY

Actuated by an electrical impulse . . . operates on the output of a scaler, photo tube, limit switch or any similar device. Records counts with relation to time and quantity on a roll of tape . . . automatically resets to zero.

In Radioactive Research, it saves precious man hours and results in greater economy and efficiency.

In Industry it maintains a permanent record automatically, recording production and time each hour.

Whatever your counting problems, our Engineering Department can adapt these Recorders to meet your particular need.

Write for interesting Booklet SC 12

SCALES
WEIGHT RECORDERS
HI-SPEED COUNTERS

FOUNDED 1888

STREETER-AMET COMPANY
4101 N. RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 8409 if you write the maker

Announcing the

REMINGTON STUD DRIVER

New cartridge-powered tool fastens steel or wood to concrete or steel *in seconds!*

Now you can set studs at the cost-slashing rate of *5 per minute* with the new Remington Stud Driver. It's up to 100 times faster than conventional methods for fastening steel or wood structural pieces to concrete or steel surfaces.

This safe, easy-to-use tool will set a stud in concrete that will support more than a ton. Just load stud and cartridge, press safety shield against work, depress safety button, and fire. It's that quick . . . and it's quiet. Makes fast work of hard-to-reach jobs. Safety shield, cocking indicator and safety button make it *extra*-safe.

No wires . . . no investment or costly maintenance for outside power source or equipment. The Remington Stud Driver saves time, cuts costs on jobs like hanging steel sash to concrete, setting steel or wood partitions on concrete floors, attaching electric fixtures to masonry, and hundreds of others.

Weighs only 5½ pounds . . . all working parts made of heat-treated alloy steel—housed in strong aluminum. One handy unit sets a wide variety of studs, using cartridges available in 5 different power loads.

This modern, versatile construction and maintenance tool costs only $119.50. Write *today* for more details and the address of your distributor. Remington Arms Company, Inc.—Industrial Tool Division—931 Barnum Ave., Bridgeport 2, Connecticut.

Remington DU PONT

BREVITY—Identify by IEN - 8411 if you write the maker

METER . . Measures liquid flow, includes air separator and strainer

Source: BOWSER INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

Rating is to 70 gpm. at 125 lb. for this new integral assembly of liquid meter, air separator and strainer. It has been designed particularly for use on tank trucks and loading racks and to apply in connection with industrial processing and stockroom handling. It will meter any standard noncorrosive liquid.

The assembly includes a totalizer in addition to the counter. Connections are 2-in. flanged design. A shut-off valve stops liquid flow at the meter inlet in the event of supply failure.

BREVITY—Identify by IEN - 8412 if you write the maker

STRAPPING . . Plier type cutter to remove tightly bound ¾ in. strap

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.

New cutter measures 9 in. in overall length, weighs ¾ lb. and will cut through steel straps measuring ¾ in. in width by 0.050 in. in thickness. The blade cuts with a shearing action. The nose is shaped for insertion under tightly bound straps.

BREVITY—Identify by IEN - 8413 if you write the maker

DISPENSING . . Portable roll holder and cutter for cushioned packaging paper

Source: UNISTRUT PRODUCTS CO.
1011-15 W. Washington Blvd., Chicago 7, Ill.

New dispenser takes two rolls of paper for feed under a cutter to serve the requirements of a packaging or shipping department. The cutter mounts a slitting roller that severs the paper as it is drawn across under its guide bar. The assembly is mounted on casters and is available for specified sizes of roll and for overall width and height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 8414 if you write the maker

helpful HYDRAULIC PRESS catalog

75 STANDARD MODELS

Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

do ALL you CAN do . . . with

HANNIFIN

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Riveters • Air Control Valves

BREVITY—Identify by IEN - 8415 if you write the maker

NEW USE FOR FULLERGRIPT BRUSHES

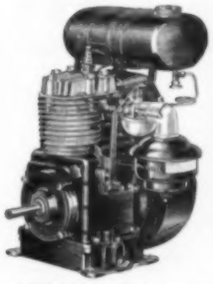
Now on Pratt & Whitney Vertical Die and Surface Grinders

On the new P & W Vertical Die and Surface Grinder a circular strip of Fullergript brush is mounted on the guard surrounding the grinding wheel to protect the operator from spray and to concentrate coolant on the work. Fullergript was selected because the brush material—in this case abrasion-resisting nylon—is densely packed, and anchored in a rust-resistant metal channel. Fullergript can be formed into innumerable shapes and attached to stationary or power-driven mountings. For ideas on how Fullergript can help you, send for booklet, "Fullergript Power Brushes".

FULLER BRUSH — At home... in business, too

THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

BREVITY—Identify by IEN - 8416 if you write the maker



MODEL K-12-2, 3 H. P. 4-cycle, single cylinder, air-cooled. Length 14", width 14", height 19". Wt. 63 lbs.

RELIABLE POWER FOR:
CONCRETE MIXERS
ROAD OILERS • COMPRESSORS
FLOOR SWEEPERS
GENERATORS • HOISTS
CENTRIFUGAL PUMPS
LIFT TRUCKS • PORTABLE SAWS
SNOW REMOVAL EQUIPMENT
SPRAYERS • VIBRATORS

KOHLER ENGINES

Four-Cycle Air-Cooled

Kohler Engines are engineered and built to give the economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

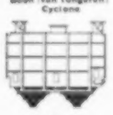
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

BREVITY—Identify by IEN - 8417 if you write the maker

buell KNOWS DUST RECOVERY

Buell (van Tongeren) Cyclone



Buell "Sd" Electric Precipitator

Combination Cyclone-Precipitator Unit

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5050, 70 Pine St., New York 5, N. Y.

buell

Engineered Efficiency in **Dust Recovery**

BREVITY—Identify by IEN - 8418 if you write the maker

...IN THE PRODUCTS YOU BUILD

Manufacturers-equip your products with the finest floats available—*Stainless Steel Floats* from Chicago Float Works. Your product can have no better assurance of long trouble-free float performance. You get all of the plus values of *Stainless Steel* along with Chicago Float Work's more than thirty years of specialized experience in engineering and building floats for industry.

....check these features

CORROSION RESISTANCE. *Stainless Steel* stands up better under severe services in many different kinds of corrosive fluids.

EXTREME STRENGTH. Will withstand pressures up 1000 lbs. Temperatures to 800° F.

LIGHTER. Less weight affords more buoyancy making for more positive float action.

COMPLETE LINE. Diameters 3 to 10 in. Special sizes to order—standard or special float connections. Write for catalog giving sizes, shapes, apud connections, and complete engineering data.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

BREVITY—Identify by IEN - 8419 if you write the maker

Just 45 Seconds to Flatten a Flat Iron

with PORTER-CABLE *Abrasive Belt Machining*

Aluminum sole plate for flat iron machined flat — and finish-ground — in one free-hand operation on Porter-Cable BG-8 Wet-Dry Belt Surfacer. No fixtures necessary. Time per piece: 45 seconds.

Abrasive belt machines drastically reduce surfacing time—often do milling, shaping and grinding operations 10 times faster—save 75 to 90% set-up time.

Stock is removed and the final finish obtained *in one operation.* Jigs and fixtures are simpler, less costly, or eliminated entirely. The wet belt prevents distortion, discoloring, fracturing, chipping. Mail coupon for more information—learn the many applications which will save time and greatly speed-up your production.

Porter-Cable Abrasive Belt Machines speed production on all these operations . . .

- Machine Flats
- Grind Contours
- Does Centerless Grinding
- Generates Radii
- Chamfers and Bevels
- Burrs, Polishes
- Smooths Parting Lines

A Complete Line:

PORTER-CABLE MACHINE CO.
6008 N. Salina St., Syracuse 8, N. Y.

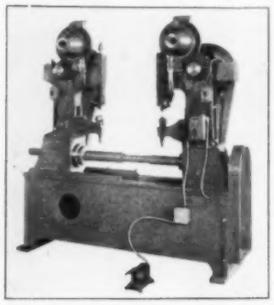
Please send me copy of your folder, "Abrasive Belt Machining."
Name
Firm Name
Address
City State

Mfrs. of SPEEDMATIC and GUILD ELECTRIC TOOLS
In Canada write: Strongridge, Ltd. St. Catharines, Ont.

BREVITY—Identify by IEN - 8421 if you write the maker

RIVETING . . Double head machine feeds and drives 1/4 by 5/8 in. rivets

Source: TOMKINS-JOHNSON CO.
615-19 N. Mechanic St., Jackson, Mich.



Dual Rivitor is a new special assembly of two of the company's standard riveting heads and feed mechanisms to take rivets from 10-in. hoppers and position and drive them in connection with assembly of a farm-implement part. The heads are mounted face to face on a common base and are adjustable for centers ranging from 2½ to 18 inches. One motor drives both flywheels by means of a combination gear and chain transmission. Both clutches are tripped by solenoids connecting to a single foot switch.

BREVITY—Identify by IEN - 8422 if you write the maker

STRIPPING . . Viscous liquid loosens paint and varnish to wipe off

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, Dept. IEN, St. Paul 1, Minn.

Price range $3.65 to $4.15 per gallon

Varnishes, sealing materials, shellac, enamels and paints are loosened from wood, concrete, terrazzo by application of the company's new non-inflammable stripping liquid. The coating can be removed in 30 to 40 min. after application with the aid of steel wool or a scraper. As soon as the loosened material has been taken away, the surface is ready for refinishing without further cleaning. Seal and Varnish Stripper is the designation. Packaging is in 1 to 55-gal. containers.

BREVITY—Identify by IEN - 8423 if you write the maker

CLEANING . . Liquid concentrate for concrete, metal, painted surfaces

Source: FINE ORGANICS INC.
211 E. 19th St., Dept. 5-6, New York 3, N. Y.

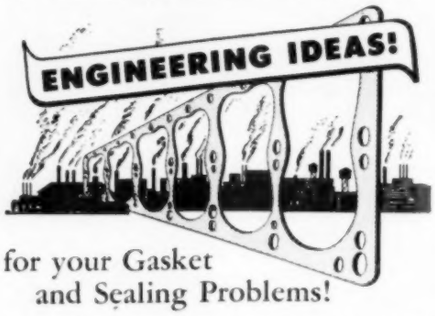
$1.80 per gallon in 5-gal. cans

Type FO-106 solvent emulsion is a new liquid concentrate for dilution with kerosene or Stoddard solvent in proportion of 4 to 9 parts of the solvent to 1 part of the concentrate. It is applied to concrete, metal or painted surfaces by brush or spray in the diluted form and is then rinsed with hot or cold water. Dirt and grease are emulsified and carried away in the rinse. Painted surfaces are not harmed. Any oily film is removed.

The solution is suited also for parts cleaning and soaking to remove greasy deposits. The concentrate can be diluted with water and heated to 160 deg. F. for spray cleaning in process work. A 1 to 9 solution can be used without rinsing to wipe down machines and equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8424 if you write the maker



for your Gasket and Sealing Problems!

Looking for new ideas on gasketing or sealing? Let Fel-Pro Engineers help you solve these problems. For over 30 years Fel-Pro has designed and developed sealing materials, gaskets, etc. for industry. This experience can be put to work for you. Send us details and specifications on any of your specific requirements for our cost-cutting, product-improving ideas and recommendations. Write: FELT PRODUCTS MFG. CO., 1523 Carroll Avenue, Chicago 7, Ill.

SIGNED

FEL-PRO Utilize Newest Materials
ENGINEERED
Specifically designed for your product **gaskets**

BREVITY—Identify by IEN - 8425 if you write the maker

REALOCK FENCE

means what it says

Realock Fence provides real locked-in protection for your grounds and property. All fittings have bolts placed so that nuts are removable only from the inside ...thereby insuring safety from intruders.

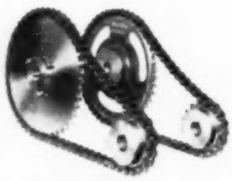
Realock Fence is heavily galvanized by a special process...gives weather-resistant, durable service year after year with little or no expense for maintenance. Expert erection service is conveniently available.

For additional information write our nearest sales office or consult your classified telephone directory.

EAST: Wickwire Spencer Steel Division, Buffalo, New York
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION CF&I
BRANCHES IN ALL KEY CITIES

BREVITY—Identify by IEN - 8426 if you write the maker



CULLMAN

Sprockets and Roller Chain

STOCK OR SPECIALS

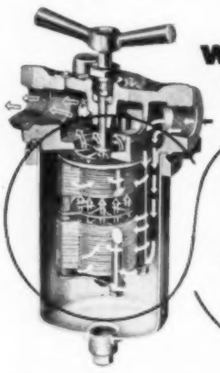
Utilize Cullman Sprockets and Roller Chains supplied promptly from Cullman's adequate stocks. Cullman Wheel Co. has been supplying high efficiency drives of low first cost and long service life throughout its 56 years of specialization in designing and manufacturing dependable transmission units and components. These factors are the common objective of machine designers and purchasers. Orders for specials are delivered quickly.

Send us your prints and we will quote promptly.
* * *
Many Cullman Distributors ready to serve you

CULLMAN WHEEL COMPANY
3357 West Altgeld St.
Chicago 14, Illinois

CULLMAN *power transmission*
SPROCKETS and ROLLER CHAIN

BREVITY—Identify by IEN - 8427 if you write the maker



WHAT FLUID STRAINER

is non-stopping (A) and is permanent (B) and handles full flow (C) and guarantees performance (D) ?

A. Cuno AUTO-KLEAN is continuously-cleanable, manually or automatically, without stopping flow

B. Cuno AUTO-KLEAN is all-metal, disc-type, non-collapsible

C. Cuno AUTO-KLEAN can handle full flow—a few to more than 4000 gpm—in same space as usual partial-flow type

D. Cuno AUTO-KLEAN will remove all particles larger than specified—from .0035 in. to .062 in.

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

Widely used on lubricating, hydraulic and fuel oils, water, and all industrial fluids.

For free booklet on fluid straining, address Cuno Engineering Corp., 695 South Vine Street, Meriden, Connecticut.

BREVITY—Identify by IEN - 8428 if you write the maker

2 NEW AO PRODUCTS

For Better Welding See-Ability!

COVER LENSES and COVER PLATES

NEW PLASTIC COVER LENSES

Give Longer Life . . . Reduce Fogging

AO's latest in protecting filter lenses from spatter in welding and burning work. Made of thin cellulose, center portion of lens is raised to permit space between it and filter lens. THIS AIR SPACE BETWEEN-LENSES CREATES A NEAR VACUUM THAT AUTOMATICALLY *REDUCES FOGGING TO MINIMUM.* The No. 162 LASTS LONGER, too—won't break when dropped—won't crack because shock-absorbing acetate cushions the blow.

NEW PLASTIC COVER PLATES

Give Thrifty Protection Against Pitting and Scratching

These clear, hard plates (AO No. 168) compare in smoothness and lustre with polished plate glass. Superior resistance to abrasion makes them ideal protection against pitting by welding spatter. Long lasting—easily cleaned.

YOUR NEAREST AO SAFETY PRODUCTS REPRESENTATIVE CAN SUPPLY YOU.

American Optical SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

BREVITY—Identify by IEN - 8429 if you write the maker

INVISIBLE 'RAINCOAT' for MASONRY WALLS!

Sonneborn presents revolutionary new waterproofing! Only S·X makes porous masonry instantly water-repellent! Easily applied! Will not discolor! Will not wear away!

HYDROCIDE S·X COLORLESS

Product of Sonneborn RESEARCH

GREATEST advance in waterproofing in years! Immediately after S·X is applied, above-grade, exterior masonry becomes water-repellent! No change in appearance of wall! In test after test, the equivalent of more than 10 years exposure to weather did not reduce water-repellency!

Revolutionary Principle—S·X penetrates deeply, and lines each pore of the masonry with '*Hycon*'—Sonneborn's exclusive super-powerful silicone. Your walls can still 'breathe.' But the S·X repels water . . . sheds airborne soot . . . halts efflorescence!

Your own company's management may have already seen the first S·X ads in TIME and SATURDAY EVENING POST. Don't delay! Get facts today!

TRADE MARK REG. U. S. PAT. OFF.

MAIL COUPON NOW!

L. Sonneborn Sons, Inc., Building Products Div.
Dept. A-8, 80 Eighth Avenue, New York 11, N. Y.

Please rush FREE complete information and technical specifications on S•X.

NAME_____ TITLE_____

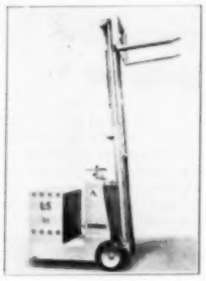
FIRM_____

ADDRESS_____

BREVITY—Identify by IEN - 8431 if you write the maker

TRUCK . . Motor driven fork lift rates 2 ton on 32 in. load length

Source: LEWIS-SHEPARD PRODUCTS INC.
195 Walnut St., Watertown 72, Mass.



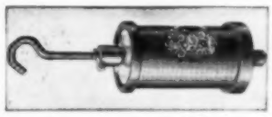
The operator rides in standing position back of the uprights on this new Space Master 61 truck. He controls three-speed movement forward and reverse to 5 mph. He can turn in 69¼-in. intersecting aisles on a 61-in. outside radius based on forks 36 in. in length.

Lift speed is 23 fpm. with a 2-ton load. The movement is powered by a motor-driven hydraulic pump with control at a hand lever. Lowering speed is maximum at 44 fpm. Hydraulic pressure is employed also for tilt 10 deg. to the rear and 3 deg. to the front. Free lift for the forks is to 65¼ inches. Maximum lift is either 97 or 127 in. as specified. Overall dimensions are about 105 in. with 36-in. forks by 34 in. by 83 in. over the uprights with the forks down instead of elevated as shown.

BREVITY—Identify by IEN - 8432 if you write the maker

METAL TREATING . . Anodizing basket to immerse small work in acid solution

Source: BELKE MFG. CO.
941-45 N. Cicero Ave., Chicago 47, Ill.

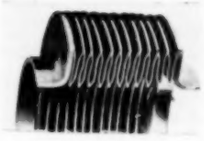


Bakelite cylinder and cover plates form the housing for this new anodizing basket. The center stem is made of aluminum. The cover is equipped with a spring to hold constant pressure on the work which is filled into the interior and then vibrated for compact arrangement. The basket measures 12½ in. in height by 5¾ in. i.d. with other sizes to order.

BREVITY—Identify by IEN - 8433 if you write the maker

BELLOWS . . Metal diaphragms in welded assembly to specification

Source: TITEFLEX INC.
593 Frelinghuysen Ave., Newark 5, N. J.



Sizes range from 1 to 5 in. in inside diameter. Length is to specification. Construction is in plain and stainless steel, brass, bronze, Monel Metal or Inconel for given requirements for this new bellows. Each assembly is available with sleeve liners or with various types of standard or special fittings. Applications are in isolation of high-frequency vibration and in compensation for lineal expansion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8434 if you write the maker

RAISE PRESS OUTPUT WITH LITTELL AUTOMATIC ROLL FEEDS

Press room output can often be multiplied five times by the simple addition of Littell Automatic Feeds to present equipment. The typical Littell Double Roll Feed shown here grips the stock on both sides of the die to assure maximum traction and feeding power. Stock is easier to start and finish in progressive die work. No hand feeding at either end of the stock. Rack and pinion drive provides the smoothness and the gradual acceleration and deceleration of feed rolls for a truly accurate feed. Standard Littell Automatic Feeds serve all types and sizes of presses, handle all standard widths and thicknesses of stock.

Installed on old or new equipment

Write for catalog

F. J. LITTELL MACHINE CO.

ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland
4133 N. Ravenswood Ave., Chicago 13, Illinois

WHEN YOU BUY FROM LITTELL . . . YOU PURCHASE A PACKAGE OF SATISFACTION

BREVITY—Identify by IEN - 8435 if you write the maker

pack 64% MORE CURRENT into raceways

When you're called upon to provide extra capacity, how can you satisfy increasing load demands and still use existing raceways? Here's how: re-wire with General Electric Deltabeston* AVA cable—in many cases, you can provide as much as 64% more current-carrying capacity than with ordinary 60 C cable.

AVA cables can safely carry more current at normal ambient temperatures because they can operate effectively at higher copper temperatures. The reason: G-E Deltabeston AVA cables are built to *beat the heat.* They are doubly insulated with heat-beating asbestos and G-E No. 1799 varnished cambric.

Recommend G-E Deltabeston AVA cables for modernization of old systems and for long life in new installations. For information write to Section W66-842, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

**Registered Trade Mark of General Electric Company*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 8436 if you write the maker

PROBLEM:

How to Prevent Contact Sticking in a Vacuum Tube

GENERAL PLATE:

Provided the Solution with a Composite Metal Combination

A leading manufacturer of radio and industrial tubes and electronic equipment was faced with a problem of finding the right metal for use as a sliding contact in vacuum tubes.

Copper provided a mechanical problem because it tended to gall.

Molybdenum was ideal but was too thick to form and too costly to machine out of solid material.

The problem was presented to General Plate whose engineers quickly found the solution by bonding *two metals into one* . . . a thin layer of molybdenum (.005") to a thicker layer of cupro-nickel (.060").

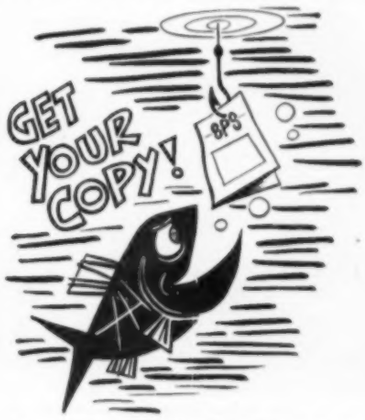
The result was a General Plate *Composite Material that was easily fabricated, gave the performance of solid molybdenum, reduced costs considerably.*

No matter what your problems, it will pay you to *check with* General Plate. Their vast experience in combining precious to base metals or base to base metals can overcome your problems . . . often reduce costs.

Have You a Composite Metal Problem? General Plate can solve it for you

GENERAL PLATE
Division of Metals & Controls Corporation
78 Forest Street, Attleboro, Mass.

BREVITY—Identify by IEN - 8437 if you write the maker



—of "Standard's" UNBRAKO *Standards.*

Write on your business letterhead, today.

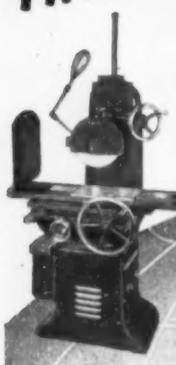
SOCKET UNBRAKO SCREWS

"STANDARD" RECOMMENDS STANDARDS

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 8438 if you write the maker

FAVORITE GRINDER



IN TOOLROOMS THE WORLD OVER

There are over 2000 Abrasive No. 1½ Surface Grinders in the hands of satisfied users. Work produced on this machine is of extremely high accuracy and fine surface finish. No. 1½ handles the most exacting types of flat, form, and gage grinding in sizes up to 15" long x 10" wide x 12" high. Easy-to-work hand feeds, located conveniently, speed the work and increase tool-room output. Abrasive No. 1½ Grinder can help in your plant. Write for details. Abrasive Machine Tool Company, 18 Dunellen Road, East Providence 14, Rhode Island.

ABRASIVE ACCURACY BOOSTS PRODUCTION

Abrasive Quality is Reflected in the Finish of Your Product

BREVITY—Identify by IEN - 8439 if you write the maker

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 8440 if you write the maker

BARCOL

ELECTRIC OPERATORS FOR FACTORY GATES

Power-operated entrance gates to industrial plants are important for adequate protection and the proper control of traffic. The Barcol Electric Gate Operator, as illustrated above, is mounted in a weatherproof box at the side of the opening and attached by a chain at the correct points to insure smooth operation, with remote push-button control in the guardhouse. Barcol Operators are made for various types and sizes of such gates—let our representative give you the details.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

BREVITY—Identify by IEN - 8441 if you write the maker

LUBRICATING . . Pen type greaser, hollow needle on plunger fitted barrel

Source: GAUNT INDUSTRIES
825-29 Irving Park, Chicago 13, Ill.

Hypo-Lub to inject grease is a companion unit to the company's Hypo-Oiler, previously described IEN-1537-50. The new unit employs a transparent plastic barrel fitted with a plunger and capped with a hypodermic needle. A metal cap fits over the needle when the lubricator is not in use. The unit is particularly suited to inject new grease into rubber-sealed ball bearings and for lubrication of instruments of various types. Parts difficult to reach can be lubricated without damage or smearing. List price is $1.

BREVITY—Identify by IEN - 8442 if you write the maker

TESTING . . Electronic instrument to check minute mechanical movement

Source: RAHM INSTRUMENTS INC.
12 W. Broadway, First Floor, New York 7, N. Y.

Technical data upon request

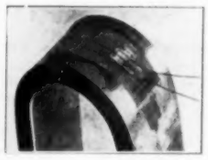
Signatron trade names new assembly of sensing element and electronic analyzer to detect, by minute mechanical movement, changes in factors such as acceleration, displacement, pressure, strain, temperature and to provide a reading in terms of amplitude on a meter or a recorder. The sensing element is contained in a stainless steel cylinder measuring ¾ by 2¾ inches. It is equipped with mounting threads at one end. The analyzer unit is assembled in a metal housing measuring 17¼ by 10 by 7¼ inches. Operation is on 110-volt 60-cycle ac.

The sensing element encloses a fine wire in a magnetic field. One end of the wire is anchored to the solid end of the element. The other end is secured in a diaphragm at the opposite end. A feed-back circuit maintains vibration in the wire at any fundamental frequency between 1 and 5 kc. or, by arrangement of the magnetic field, to a maximum of 20 kc.

BREVITY—Identify by IEN - 8443 if you write the maker

GAGE . . Resistance wire unit for strain measurements to 10 per cent

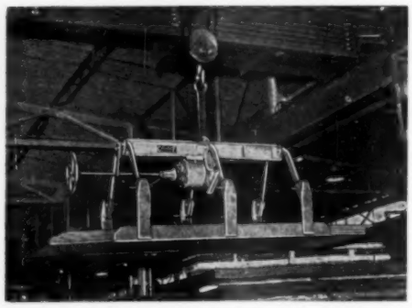
Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



New design in the company's Type SR-4 bonded resistance-wire strain gage has a flat-grid paper-base construction and is known as Type PA-3. It applies by means of a special air-drying cement according to instructions for given test procedures. Resistance measures 120 ohms. Gage factor is 2.0 and gage length is $\frac{12}{32}$ inch. Minimum trim width is $\frac{15}{32}$ inch. Change in electrical resistance accompanies elongation and is measured by a Wheatstone bridge and galvanometer or electronic apparatus.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 8444 if you write the maker



Save Time . . . Save Sheets

Handle loose or bundled sheets with one of these C-F Lifters and you save TIME and SHEETS, because C-F Lifters, under one man end control, can handle more sheets per load safer, faster and more economically. Tong action grips load tightly, yet design features like wide bearing surface give full protection to stock edges. End control of C-F Lifters permits closer stacking piles—resulting in more efficient use of storage facilities. C-F Lifters are available in capacities from 2 to 60 tons or larger, in standard or semi-special designs.

WRITE FOR THE BULLETIN "C-F LIFTERS"

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

CULLEN-FRIESTEDT CO., 1310 So. Kilbourn Ave., Chicago 23, Illinois

BREVITY—Identify by IEN - 8445 if you write the maker

HEAT-SEAL DIRECTLY

ON

- Polyethylene
- Pliofilm
- Other films

No Intermediate Material Required

Use the NEW "SEALINE MODEL 50" for direct heat-sealing of thermo-plastic films without the use of any intermediate materials.

Seal bag-ends or over-wraps quickly and permanently with the free-rolling heated wheel. Ideal for sealing odd shaped packs and for getting around difficult areas.

Adjustable temperatures from 200 to 400° F. Uses only 50 watts, AC or DC.

SAVES FILM! New—Fast—Efficient

Price **$18.75** f.o.b. Chicago

ORDER DIRECT

SEALINE MANUFACTURING CORP.

166 N. Peoria St. Chicago 7, Ill.

BREVITY—Identify by IEN - 8446 if you write the maker

SHELDON
CHICAGO

A better Lathe from any angle

Judge it from any angle: for accuracy, stamina, rigidity or capacity (for size). Check its component parts—its spindle, spindle bearings, lead screw, apron, carriage, bed, gearing, or the power delivered by its drive—you will find the SHELDON Lathe a quality tool both in appearance and "under the hood".

Write for Catalog

SHELDON MACHINE CO., Inc., 4208 North Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 8447 if you write the maker

Wilsonize TO ECONOMIZE

Yes, tube maintenance problems are cut down to size . . . *and* savings start to rise . . . when you Wilsonize your tube cleaning and expanding equipment. That's because powerful, fast-acting Wilson Tube Cleaners assure more thorough, quicker removal of deposits from curved or straight tubes. Parallel rolling Wilson Tube Expanders give you tighter joints, eliminate the need for frequent re-rolling.

Wilsonizing means equipment goes back on the line faster, production stays in high gear, maintenance costs are radically reduced. Send for 48-page Bulletin on complete Wilson Tube Cleaner line and for Tube Expander Catalog. A single request brings both.

THOMAS C. WILSON, INC.
21-11 44th AVENUE, LONG ISLAND CITY 1, N. Y.

WILSON

WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

BREVITY—Identify by IEN - 8448 if you write the maker

SAVE TIME & MONEY

WITH "T.P.A."* TRANSPARENT WORK RECORD HOLDERS—

REDUCE COSTLY ERRORS. KEEP WORK RECORDS CLEAN AND UNDERSTANDABLE. STEP UP JOB EFFICIENCY. Used in increasing numbers throughout defense industries. Hands may be dirty but records keep clean with "T.P.A. protection. No misunderstoods." No alibis. No confusion. For work records, job ticketing, material control and many other uses.

Write for low cost data—FREE sample—while supply lasts.

All new clear plastic protection. Leatherette bound. Reinforced corners. Styles to suit your needs.

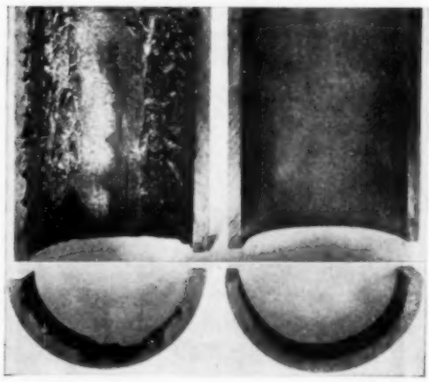
Binder envelopes—Blue Print Holders—Workshop envelopes—I.D. Card holders—Billfold inserts—Plastic specialties

TRANSPARENT PLASTIC ARMOR

Trade Mark

"NAPLASCO" NATIONAL PLASTIC COMPANY
16 East 23rd Street, New York, N. Y. (GRamercy 7-1399)
8 South Dearborn, Chicago, Ill. (CEntral 6-0025)
Main Office and Factory: 2591 E. Foothill Blvd., Pasadena, Calif. (RYan 1-8147)

BREVITY—Identify by IEN - 8449 if you write the maker



Don't Let Corrosion Steal Your Steel!

A major oil company coated the inside of 4-inch steel tubing with finishes based on VINYLITE Brand Resins. Each day, for five months, the pipe carried 100 barrels of oil and 5,000 barrels of high-iodine-content salt water. It was directly coupled to an uncoated pipe.

The coated pipe (right) suffered no measurable damage. The uncoated pipe (left) corroded as deeply as a quarter of an inch — two-thirds of the way through the pipe.

Preserving metal and slashing maintenance costs, coatings based on VINYLITE Resins are widely used today in the petroleum, chemical, and processing industries . . . because they resist water, salt air, industrial atmospheres, oils, greases, alkalies, most strong acids, sunlight, heat, cold. Odorless, tasteless, non-flammable, they protect containers from contents, contents from containers.

We'll gladly send you a list of suppliers of metal, concrete and masonry coatings based on VINYLITE Resins. Write Dept. KX-3.

Coatings illustrated applied by Liquid Plastics Co., 640 N. Broad Ave., Wilmington, California and produced by Plastic Coating Corp., Houston 19, Texas, and 30 Rockefeller Plaza, New York 20, N.Y.

Vinylite BRAND **RESINS**

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N.Y.

BREVITY—Identify by IEN - 8451 if you write the maker

PYROMETER . . Portable resistance unit, surface and immersion, to 800 deg. F.

Source: CLAUD S. GORDON CO.
3002 S. Wallace St., Chicago 20, Ill.

Type LT-840 is a new unit in the company's Xactemp line for general use to measure surface temperatures on stationary and revolving rolls, flat and irregular surfaces of molds, dies, immersion temperatures in plastic materials, rubber, wax, oils, grease. The unit is available in four calibrations, one from 0 to 300 deg. C. and three starting at 50 deg. and running up to 400, 600, and 800 deg. F. A chromel-constantan thermocouple is employed. List price without the thermocouple is $51.50 for the new pyrometer.

BREVITY—Identify by IEN - 8452 if you write the maker

CORROSION PROOFING . . Liquid for metal surface dissolves in naphtha

Source: THOMAS CO.
1643-47 Hennepin Ave., Minneapolis 3, Minn.

List is about $3.50 per gal.

Powerfilm trade names a corrosion-proofing material that has been in use by State Highway Departments for their operating equipment for a period of time. It is now offered for general industrial use to brush, spray or wipe on metal surfaces. It forms a tough non-oily protective film that will not crack or chip nor attract dust or dirt.

It will protect equipment that must stand out in all types of weather. It preserves the brilliance of chromium plate. It seals the surfaces of metal parts, can be wiped down on automotive finishes to produce a protective film. The material will not harm paint and is non-toxic. It is packaged in 5 to 55-gal. containers as standard quantities.

BREVITY—Identify by IEN - 8453 if you write the maker

CAPACITOR . . Paper dielectric unit rates 1,000 hr. in 100 volt dc. circuit

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

New capacitor is intended for use in dc. circuits with ripple voltage in accordance with specification JAN-C-25. It also will withstand occasional heavy discharges and is suitable for use in low-voltage ac. circuits. Tests indicate negligible change in capacitance between minus 40 and plus 105 deg. C.

Rated life of 1,000 hr. in service in 100-volt dc. circuits is maintained at temperatures as low as minus 55 deg. C. The capacitor will not introduce noise into a circuit. It will pass signal voltages approaching zero.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

BREVITY—Identify by IEN - 8454 if you write the maker

PRODUCTION INSURANCE against GAS CURTAILMENT

ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier

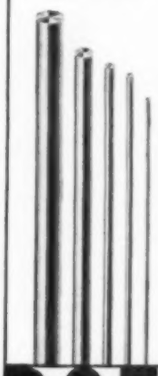
VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 8455 if you write the maker

BREVITY—Identify by IEN - 8456 if you write the maker

SPRING WIRE

Roebling is one of the largest makers of specialty wire



ROEBLING MAKES A FULL range of Spring Wire. There's upholsterers' spring wire. There's a large line of mechanical spring wires, including hard drawn, soft, annealed or oil-tempered M.B., H.B., and Extra H.B. spring wires; music wire and valve spring wire. And Roebling's skill assures the uniform quality that brings faster, smoother production for users.

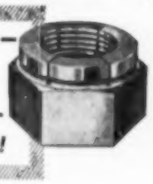
Large quantities of Roebling specialty wires are required in the rearmament program. We will do our best, however, to meet your requirements. John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

BREVITY—Identify by IEN - 8457 if you write the maker

A fastener AIN'T, if — it works loose.

The "FLEXLOC" IS — because it won't!



FLEXLOC

ONE-PIECE, ALL-METAL
STOP- and LOCK-NUT

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 8458 if you write the maker

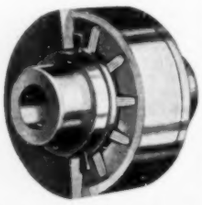
KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without and thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery. Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h. p. in Use

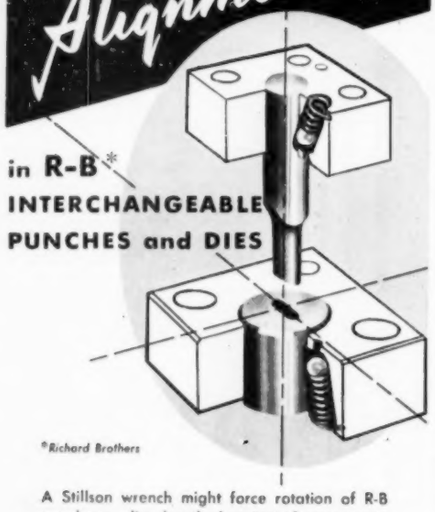
MFRS. OF SECTIONAL STOCK RACKS



BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN - 8459 if you write the maker

POSITIVE *Alignment*



in R-B* INTERCHANGEABLE PUNCHES and DIES

*Richard Brothers

A Stillson wrench might force rotation of R-B punches or dies, but the heaviest of press usage will ***never*** budge them once they're locked in position. These time-and-money savers are easy to install and remove: just a push, a twist and "Click," the ball locks in the recess on the punch or die button.

The R-B ball lock **keeps** punches and dies perfectly aligned—both vertically and radially. Its positive alignment assures trouble-free piercing of even the most complex shapes. Why not send today for the whole story? **Allied Products Corporation, Richard Brothers Division.**
Dept. 57 • 12615 Burt Road, Detroit 23, Mich.

Get the Whole Story

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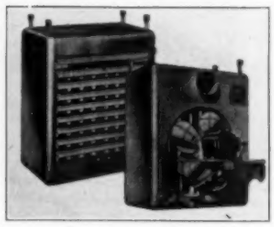
RICHARD BROTHERS DIVISION
Dept. 57 • 12615 Burt Rd., Detroit 23, Mich.
Please send me your 52-page free catalog.
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Also Produced in Allied's Four Plants . . .
HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES

BREVITY—Identify by IEN - 8461 if you write the maker

HEATING . . Gas fired space unit, has ratings to 200,000 btu. per hour

Source: UNITED STATES AIR CONDITIONING CORP. 3318 Como Ave. S. E., Dept. IEN, Minneapolis 14, Minn.



Gas burners fire directly into cast-iron heat exchangers in a Series 20 assembly and into sheet-steel exchangers in a Series 23, making up a new line of unit heaters. The line includes fan, blower and duct-type models for application with natural, manufactured, mixed or propane gas. Each assembly is enclosed in a steel housing with green hammertone baked-enamel finish. Mounting is from overhead suspension not closer than 6 in. from a ceiling.

Series 20 is available in capacities from 100,000 to 135,000 btu. per hour. Series 23 rates 55,000 to 200,000 btu. per hour.

BREVITY—Identify by IEN - 8462 if you write the maker

EXTINGUISHING . . Non-corrosive liquid generates fire smothering foam blanket

Source: NATIONAL FOAM SYSTEM INC. Adams & Union Sts., West Chester, Pa.

For fires in flammable liquids

Aer-O-Foam 99 is a new liquid that remains free flowing at temperatures down to 99 deg. F. It is designed for feed through 6 per cent mechanical foam-making proportioning devices and other mechanical foam equipment for use on fires involving polar solvents, petroleum products. It forms a thick chemically-resistant blanket of foam that spreads across a flaming fluid to smother the flame. If the foam mass is broken it quickly reseals. It also adheres to and insulates all types of surfaces with a uniform blanket.

BREVITY—Identify by IEN - 8463 if you write the maker

CONNECTOR . . Spring blade plug makes contact in worn receptacle

Source: LAMINATED METALS PRODUCTS CORP. 9991-95 Broadstreet Ave., Detroit 4, Mich.

The spring blades in this new Waldron plug are curved outward in both directions, for each blade, to "find" and make contact with the blades in a receptacle. The flexibility also acts as a locking element to prevent the plug from dropping out of a receptacle in which the blades are loose. The plug is approved by Underwriters' Laboratories for use on electric cords to carry 15 amp. at 110-volt or 10 amp at 220-volts ac. or dc. The assembly includes wires welded to the blade.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8464 if you write the maker

new **OTC POWER-TWIN**

PORTABLE PEDESTAL PRESS

An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

STRONG. Handles 95% of all pulling or installing jobs. Especially designed for use with OTC 17½ ton Hydraulic Puller.

AMAZINGLY PRACTICAL for all production, assembly line and maintenance operations.

PORTABLE OR PERMANENT. Easily moved from job to job or located near permanent equipment.

COMPACT. Base is only 20 x 21 inches.

VERSATILE. Provides almost unlimited vertical adjustment for pulling or installing wheels, pulleys, bushings, collars, couplings, gears, shafts and bearings.

POWER-TWIN HYDRAULIC BENCH PRESS

Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

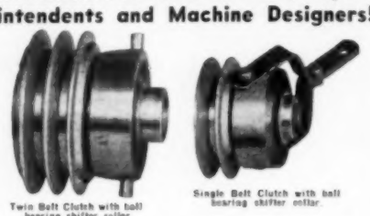
See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

BREVITY—Identify by IEN - 8465 if you write the maker

"ball-lok" V-Belt Clutch

Clutch News to Interest Shop Superintendents and Machine Designers!



Twin Belt Clutch with ball bearing shifter collar — Single Belt Clutch with ball bearing shifter collar.

Single and multi-belt clutches with ball bearing shifter collars are being widely adapted to driving equipment with a high rate of off-and-on engagements per hour. "Locking" or "Non-Locking" types available. The "Ball-lok" V-Belt Clutch has become the practical solution to such intermittent duty in many industrial machines. Knitting, winding, paper conversion and packaging machines are just a few of the typical units on which "Ball-loks" are serving effectively. WRITE FOR OTHER "BALL-LOK" MODIFICATIONS TO FIT UNUSUAL DRIVE PROBLEMS.

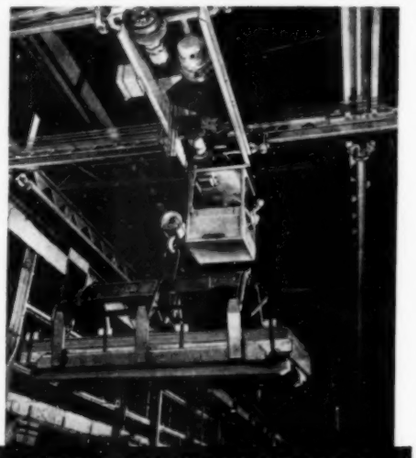
"BALL-LOK" CLUTCHES SOLD COAST-TO-COAST. RECOGNIZED AS STANDARD EQUIPMENT IN POWER TRANSMISSION FIELD.

Write for your copy of the Illustrated "V-Belt Roundup"

V-BELT CLUTCH CO. 418 N. Western Avenue, Los Angeles 4, California

BREVITY—Identify by IEN - 8466 if you write the maker

ECONOMICAL SHEET HANDLING



LOUDEN OVERHEAD HANDLING OF SHEET STEEL PAYS FOR ITSELF QUICKLY, AND YIELDS TREMENDOUS SAVINGS IN MAN-HOURS . . .

To meet the mill practice of shipping sheet steel in five-ton bundles, it is almost mandatory that fabricators likewise use overhead handling equipment. Otherwise expensive man-handling and inefficient transportation inside the plant are inescapable. Further, steel prices are higher when sheets are shipped in less than five-ton bundles.

Louden Monorail equipment permits bundles to be hoisted intact from railroad cars and moved to storage or the start of a fabricating process anywhere inside the plant. Then, the same equipment may be used for intermediate handling steps in the fabricating process.

WRITE FOR THIS FREE BOOK
Case histories telling how Louden Monorail Systems have saved time and money for widely different kinds of industries are described and pictured in a new, illustrated, 56-page book called, "Economical Material Handling".

THE LOUDEN MACHINERY COMPANY
204 S. Superior Ave., Fairfield, Iowa

Louden
OVERHEAD MATERIAL HANDLING

BREVITY—Identify by IEN - 8468 if you write the maker

CONTROL AIR ELECTRICALLY

Model NE Electric Valve Controls Single- or Double-Acting Air Cylinders

10 WATT SOLENOIDS—Little power needed because air does the work. No relays, no transformers required. Operates directly off regular 110 or 220 v. circuits. Solenoids continuously rated.

FAST, EFFORTLESS CONTROL—Works by push button, limit switch, or any light contact. Only momentary contact needed. Ideal for remote control . . . interlock or sequence operation . . . building into equipment.

DISC TYPE—Metal-to-metal seat; self-lapping; positively air-tight. Air-actuated piston shifts main disc; solenoids merely open and close ports which control piston. Action is quiet, quick.

HANNIFIN ENGINEERED—Small, rugged, self-contained. Type 1 for control of advance and return cylinder strokes through separate push buttons. Type 2 for single push button control—equivalent to spring return valve action. Sizes 3/8", 1/2", and 3/4". 25 to 150 p.s.i.

Ask for Bulletin 230

HANNIFIN *Corporation*

1107 So. Kilbourn Avenue • Chicago 24, Illinois
Nationwide Sales and Service

BREVITY—Identify by IEN - 8469 if you write the maker

Depend on AUTO-LITE

FOR TEMPERATURE INDICATION

Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25.

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

AUTO-LITE
INDICATING & RECORDING THERMOMETERS

BREVITY—Identify by IEN - 8470 if you write the maker

The "manufacturer's" gauge—

For years Marsh Gauges have been first choice of manufacturers of controls and other equipment where pressure indication plays a vital part. Their use on *your* product is a mark of distinction.

The finer construction of Marsh Gauges is not limited to costly types, but is common to the entire line in square relationship to the service for which they are recommended. All—regardless of cost—are *quality* instruments.

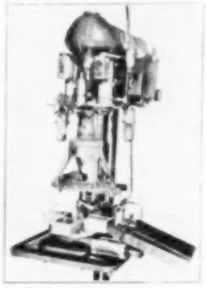
Write for this catalog covering the broader Marsh line.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., DEPT. A, SKOKIE, ILL.
Export Dept., 155 East 44th Street, New York, New York

BREVITY—Identify by IEN - 8471 if you write the maker

DRILLING . . Upright machine also for tapping, is air operated

Source: BECKETT-HARCUM CO.
1138-42 Wayne Road, Wilmington, Ohio



Complete assemblies of upright drilling machine, multiple-spindle head, index table and pneumatic control equipment are now available from the company following its initial development of air feed attachments for drilling and tapping, previously described IEN-4850-50. The new machines are supplied for specified work to drill and to produce Class-2 and Class-3 fits in tapping operations. Tap retraction is accomplished with a reversing motor drive.

Feed is by light air-pressure so the taps follow their own lead. Reversing brings the taps back out without stripping the last thread even in soft metals. Maximum feed pressure for drilling is 1,250 lb. with connection to a 100-lb. air line. The machine shown in the illustration is employed to thread die-cast parts and lists at about $1,850 complete with equipment as shown.

BREVITY—Identify by IEN - 8472 if you write the maker

VALVE . . Pressure relief unit in multiple, for hot water boilers

Source: McDONNELL & MILLER INC.
3502 N. Spaulding Ave., Chicago 18, Ill.

Illustrated details in 2 page bulletin

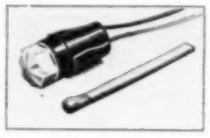
New assembly of the company's No. 33 Hydra-Lift pressure-relief valve, on a manifold taking two or three of the valve units, applies on hot water boilers.

No. 233, with two of the valves, has a rating of 496,700 btu. per hour. No. 333 rates 769,400 btu. per hour. The manifolds have 1 1/4 and 1 1/2-in. inlet. The valves are on approximate 3-in. centers. Overall height is a bit greater than 8 inches. The three valves open progressively at 30, 33 and 36 lb. respectively.

BREVITY—Identify by IEN - 8473 if you write the maker

SIGNALING . . Miniature pilot light, red nylon lens, 6 to 8 volts ac. or dc.

Source: ALDEN PRODUCTS CO.
115-19 N. Main St., Brockton 64, Mass.



Lamp and lens are integral in this new Type-8OL miniature pilot light. Initially developed for the Armed Forces, the unit is now generally available for panel and equipment application. Overall length is about 3/4 in. with diameter a little under 3/8 inch. The lens is a brilliant red. Leads with polyvinyl insulation measure 12 in. in length. They are stripped and tinned to 1/2 in. from their ends. The lamp is a special unit for original and replacement by the company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 8474 if you write the maker

Electric Heat With a Guarantee!

For OVENS and FURNACES

"Folded-and-Formed" Heating Elements covering entire work area in straight convection oven.

Custom-built insulated plug with "F-and-F" Heating Elements attached, in air circulating oven.

STANDARD RACKS—1.5 to 7.5 K. W.—made in 12" x 12" sections are used vertically or horizontally, singly or in multiples, to provide any desired total K.W.

Standard "Folded-and-Formed" racks in both type air circulating oven.

CUSTOM-BUILT RACKS available in wide variety of sizes, up to 600 K. W. in one bank.

SPECIAL RACKS, up to 10' high by 10' long, with any required K. W. per square foot of surface area.

TRENT INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA.

BREVITY—Identify by IEN - 8475 if you write the maker

Order MOTCH & MERRYWEATHER

SLITTING AND SLOTTING SAWS
SOLID AND SEGMENTAL CUT-OFF BLADES
from your Local Dealer

OR FROM OUR PLANT IN CLEVELAND . .

COMPLETE RANGE OF SIZES • PROMPT DELIVERY

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO

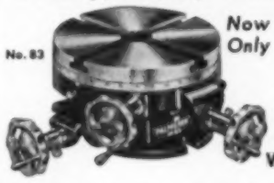
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 8476 if you write the maker

DUAL CROSS and ROTARY FEED

PALMGREN

Rotary, Index, Milling Table



No. 83

Now Only **$54.50**

Turns Your DRILL PRESS Into A VERTICAL MILLER

Think what this will mean in your shop! Can be used on any Drill Press, Lathe or Milling Machine and provides what is practically a universal milling machine.

Designed for use in all types of metal and woodworking shops. A precision table permitting fine work to close tolerances. It is accurate, speedy, well constructed and attaches quickly in a firm position.

Rotary feed calibrated in degrees; Cross feed in thousandths; Dual Cross Slide with cross feed 2 1/4" each side of center or 4 1/2" overall. Has acme thread cross feed screws, adjustable gibs on cross slides. 40 to 1 worm and gear ratio in rotary feed. Equipped with bolt slots and locking screws.

No. 83 Table Dia. 8", T-Slots 3/8", Base Keyway 3/8", Base Dia. 6 1/4", Ht. 5", Wt. 37 lbs. Price Only $54.50. Other Types available. No. 82 Dual Cross Feed only $43.75; No. 86 Rotary Feed Only $46.75.

Order Today! If dealer can't supply, write us. Ask for Circular No. 10

CHICAGO TOOL and ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS Since 1918
8406 South Chicago Ave. • Chicago 17, Ill.

BREVITY—Identify by IEN - 8477 if you write the maker

the **TOUGHEST** *clean-up problem . . .*

Now—
play a jet of Metso Cleaner solution on the most stubborn dirt job in your plant.
See the difference! Metso leaves a dirt-free surface without film.

Metso's properly balanced alkali and silica components penetrate grease and dirt deposits in less time. Ask for a sample of the proper Metso Cleaner for your operations.

METSO *detergents*

Metso Granular, Sodium Metasilicate
Metso 99, Sodium Sesquisilicate
Philadelphia Quartz Company
1131 Public Ledger Bldg., Phila. 6, Pa.

BREVITY—Identify by IEN - 8478 if you write the maker

If Your Paint Spray Booth Is A Space, Installation or Hazard Problem

R-P PAINT ARRESTORS CAN SOLVE IT FOR YOU

R-P Paint Arrestors — easily, economically installed under the floor grill, makes this installation possible. Save labor, material, maintenance costs with this flexible, effective system of overspray removal.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
MADISON 10 WISCONSIN

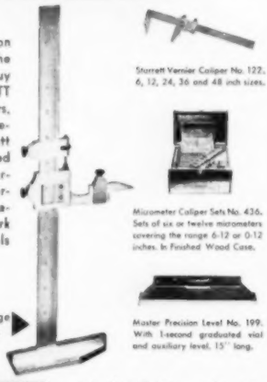
RP . . . PRODUCTS OF RESEARCH

BREVITY—Identify by IEN - 8479 if you write the maker

BUY THE TOOLS YOUR MEN KNOW AND TRUST . . .

Starrett
SHOP EQUIPMENT
PRECISION TOOLS

When you buy precision tools for the shop, buy the same kind your men buy for themselves—STARRETT TOOLS. For over 70 years, skilled craftsmen have preferred and used Starrett Tools. They are accustomed to Starrett accuracy, Starrett convenience and Starrett superior design features. They do better work and more of it with tools they know and trust.



Starrett Vernier Caliper No. 122. 6, 12, 24, 36 and 48 inch sizes.

Micrometer Caliper Sets No. 436. Sets of six or twelve micrometers covering the range 6-12 or 0-12 inches. In Finished Wood Case.

Starrett Vernier Height Gage No. 454. 10, 18, 24 inch sizes.

Master Precision Level No. 199. With 1-second graduated vial and auxiliary level. 15" long.

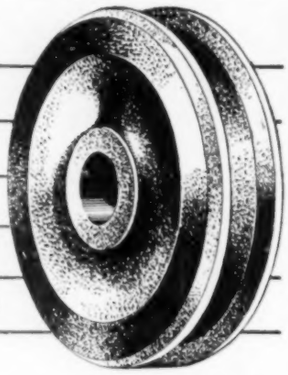
Starrett
SINCE 1880
WORLD'S GREATEST TOOLMAKERS

THE L. S. STARRETT COMPANY · ATHOL, MASS., U.S.A.

BUY THROUGH YOUR DISTRIBUTOR

BREVITY—Identify by IEN - 8480 if you write the maker

WROUGHT
STEEL
CRANE
WHEELS
by
STANDARD



Built for *extra* service by a pioneer producer of railroad wheels, under continuous quality-control from melting of metal to final finishing. Rugged, tough, strong, durable. Available in a range of sizes. Prices on request.

BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA.

Offices: Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

BALDWIN-LIMA-HAMILTON

AUGUST 1951 INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our eighteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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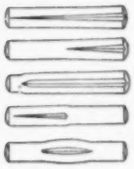

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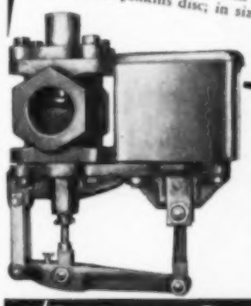

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with a company requiring a plant or administrative engineer with ten years of experience in product and machinery development, plant layout, production planning, maintenance administration. I am at present in New York City." **IEN W-54**

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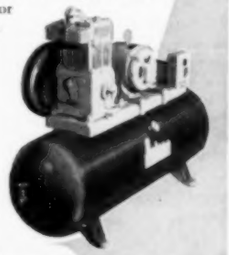

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